MICRO FOCUS® | SERENA™

ChangeMan® ZMF

ERO Getting Started Guide

Product version: 8.2 Patch 4

Publication date: September 2020

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Welcome to ChangeMan ZMF®

ChangeMan ZMF is a comprehensive and fully integrated solution for Software Change Management systems in z/OS environments. It provides reliable and streamlined implementation of software changes from development into production. ChangeMan ZMF manages and automates the application life cycle, protects the integrity of the code migration process, and results in higher quality delivered code to any test environment and to the production environment.

Before You Begin   See the Readme for the latest updates and corrections for this manual.

Objective   The *ChangeMan ZMF ERO Getting Started Guide* provides instructions for installing and using the ERO Option of ChangeMan ZMF to manage releases made up of multiple change packages.

Audience   This document provides information for ChangeMan ZMF installers, administrators, Db2 data base administrators, release managers, and developers who use the ChangeMan ZMF ERO Option.

Navigating this book
- Chapters 1-5 describe the concepts behind the ERO Option and how to install and configure it to meet your needs.
- Chapters 6-7 describe how to create and use releases and release areas.
- Chapter 8 tells you how to work with release packages and components.
- Chapter 9 and 10 describe promoting and auditing release areas.
- Chapter 11 tells you about managing release resources, including how to delete releases.
- Appendix A describes ERO Option utilities and housekeeping functions

Refer to "Guide to ChangeMan ZMF Documentation" on page 10 for additional ChangeMan ZMF documentation.

Change Bars   Change bars appear in the left margin to mark substantive changes to this manual since the last time it was published.

Guide to ChangeMan ZMF Documentation

The following sections provide basic information about ChangeMan ZMF documentation.

ChangeMan ZMF Documentation Suite

The ChangeMan ZMF documentation set includes the following manuals in PDF format.

Manual	Description
Administrator's Guide	Describes ChangeMan ZMF features and functions with instructions for choosing options and configuring global and application administration parameters.
ChangeMan ZMF Quick Reference	Provides a summary of the commands you use to perform the major functions in the ChangeMan ZMF package life cycle.
Customization Guide	Provides information about ChangeMan ZMF skeletons, exits, and utility programs that will help you to customize the base product to fit your needs.
Db2 Option Getting Started Guide	Describes how to install and use the Db2 Option of ChangeMan ZMF to manage changes to Db2 components.
ERO Concepts	Discusses the concepts of the ERO Option of ChangeMan ZMF for managing releases containing change packages.
ERO Getting Started Guide	Explains how to install and use the ERO Option of ChangeMan ZMF to manage releases containing change packages.
IMS Option Getting Started Guide	Provides instructions for implementing and using the IMS Option of ChangeMan ZMF to manage changes to IMS components.
INFO Option Getting Started Guide	Describes two methods by which ChangeMan ZMF can communicate with other applications: ■ Through a VSAM interface file. ■ Through the Tivoli Information Management for z/OS product from IBM.
Installation Guide	Provides step-by-step instructions for initial installation of ChangeMan ZMF. Assumes that no prior version is installed or that the installation will overlay the existing version.
Java / zFS Getting Started Guide	Provides information about using ZMF to manage application components stored in USS file systems, especially Java application components.
Load Balancing Option Getting Started Guide	Explains how to install and use the Load Balancing Option of ChangeMan ZMF to connect to a ZMF instance from another CPU or MVS image.
M+R Getting Started Guide	Explains how to install and use the M+R Option of ChangeMan ZMF to consolidate multiple versions of source code and other text components.

Manual	Description
M+R Quick Reference	Provides a summary of M+R Option commands in a handy pamphlet format.
Messages	Explains messages issued by ChangeMan ZMF, SERNET, and System Software Manager (SSM) used for the Staging Versions feature of ZMF.
Migration Guide	Gives guidance for upgrading ChangeMan ZMF
OFM Getting Started Guide	Explains how to install and use the Online Forms Manager (OFM) option of ChangeMan ZMF.
SER10TY User's Guide	Gives instructions for applying licenses to enable ChangeMan ZMF and its selectable options.
User's Guide	Describes how to use ChangeMan ZMF features and functions to manage changes to application components.
XML Services User's Guide	Documents the most commonly used features of the XML Services application programming interface to ChangeMan ZMF.
ZMF Web Services User's Guide	Documents the Web Services application programming interface to ChangeMan ZMF.

Using the Manuals

Use Adobe® Reader® to view ChangeMan ZMF PDF files. Download the Reader for free at get.adobe.com/reader/.

This section highlights some of the main Reader features. For more detailed information, see the Adobe Reader online help system.

The PDF manuals include the following features:

- **Bookmarks.** All of the manuals contain predefined bookmarks that make it easy for you to quickly jump to a specific topic. By default, the bookmarks appear to the left of each online manual.

- **Links.** Cross-reference links within a manual enable you to jump to other sections within the manual with a single mouse click. These links appear in blue.

- **Comments.** All PDF documentation files that Serena delivers with ChangeMan ZMF have enabled commenting with Adobe Reader. Adobe Reader version 7 and higher has commenting features that enable you to post comments to and modify the contents of PDF documents. You access these features through the Comments item on the menu bar of the Adobe Reader.

- **Printing.** While viewing a manual, you can print the current page, a range of pages, or the entire manual.

- **Advanced search.** Starting with version 6, Adobe Reader includes an advanced search feature that enables you to search across multiple PDF files in a specified directory.

Searching the ChangeMan ZMF Documentation Suite

There is no cross-book index for the ChangeMan ZMF documentation suite. You can use the Advanced Search facility in Adobe Acrobat Reader to search the entire ZMF book set for information that you want. The following steps require Adobe Reader 6 or higher.

1 Download the ZMF All Documents Bundle ZIP file and the *ChangeMan ZMF Readme* to your workstation from the My Downloads tab on the Serena Support website.

2 Unzip the PDF files in the ZMF All Documents Bundle into an empty folder. Add the *ChangeMan ZMF Readme* to the folder.

3 In Adobe Reader, select **Edit | Advanced Search** (or press **Shift+Ctrl+F**).

4 Select the **All PDF Documents in** option and use **Browse for Location** in the drop down menu to select the folder containing the ZMF documentation suite.

5 In the text box, enter the word or phrase that you want to find.

6 Optionally, select one or more of the additional search options, such as **Whole words only** and **Case-Sensitive**.

7 Click **Search**.

8 In the **Results**, expand a listed document to see all occurrences of the search argument in that PDF.

9 Click on any listed occurrence to open the PDF document to the found word or phrase.

Online Help

Online help is the primary source of information about ChangeMan ZMF. Online help is available as a tutorial, through Help screens, and in ISPF error messages.

Online Tutorial

ChangeMan ZMF includes an online tutorial that provides information about features and operations, from high-level descriptions of concepts to detailed descriptions of screen fields.

To view the tutorial table of contents, select option T from the Primary Option Menu, or jump to it from anywhere in ChangeMan ZMF by typing =T and pressing ENTER.

Press PF1 from anywhere in the Tutorial for a complete list of Tutorial navigation commands and PF keys.

Online Help Screens

If you have questions about how a ChangeMan ZMF screen works, you can view a help panel by pressing PF1 from anywhere on the screen.

Online Error Messages

If you make an invalid entry on a ChangeMan ZMF screen, or if you make an invalid request for a function, a short error message is displayed in the upper right corner of the screen. Press PF1 to display a longer error message that provides details about the error condition.

Remember that the long message does not display automatically. Request the long message by pressing PF1.

Typographical Conventions

The following typographical conventions are used in the online manuals and online help. These typographical conventions are used to assist you when using the documentation; they are not meant to contradict or change any standard use of typographical conventions in the various product components or the host operating system.

Convention	Explanation
italics	Introduces new terms that you may not be familiar with and occasionally indicates emphasis.
bold	Emphasizes important information and field names.
UPPERCASE	Indicates keys or key combinations that you can use. For example, press the ENTER key.
`monospace`	Indicates syntax examples, values that you specify, or results that you receive.
`monospaced italics`	Indicates names that are placeholders for values you specify; for example, `filename`.
vertical rule		Separates menus and their associated commands. For example, select File	Copy means to select Copy from the File menu. Also, indicates mutually exclusive choices in a command syntax line.

Chapter 1
Introduction

This chapter introduces the Enterprise Release Option of ChangeMan ZMF.

Enterprise Release Option

The Enterprise Release Option (ERO), a selectable option of Serena ChangeMan ZMF, lets you consolidate software development in multiple change packages across multiple applications into releases that allow you to manage change at the enterprise level.

ERO provides a development path in each release that is based on progressive consolidation of application package components into areas until they reside in a single set of area libraries. This consolidation guarantees that concurrent development of system objects across the enterprise is detected and resolved to prevent regression or loss of new function.

ERO manages multiple releases in motion at the same time. Development in later releases uses components that are scheduled for installation in earlier releases. The use of release libraries in build processes is dynamic. Library concatenations and contents in build jobs change when the schedule relationship between releases is changed, or when applications and packages are added or removed from a release.

Release audit is an extension of the ChangeMan ZMF package audit. Release audit uses the dynamic relationships between releases in motion and the contents of each release to evaluate the relationships between components in a release and the contents, both current and anticipated, of baseline libraries. Since release audit uses the same information that build processing uses to generate library concatenations, it detects relationships that have been invalidated by a change in the relationship between releases or in the contents of a release.

ERO provides a flexible release architecture. You define releases, areas, and applications in ERO in a design that meets your configuration management needs. The release life cycle is controlled by a set of rules that can provide the latitude developers need for rapid system development early in a project, and the rigor required to protect your production environment at later steps of development, all within a single release.

Release Elements

A release represents a collection of related and unrelated ChangeMan ZMF change packages that must be installed in the same time frame. A release is an enterprise unit of work, just as a change package is a change request unit of work, and a component in a change package is a developer unit of work.

In ERO, a release is a logical set of rules for relating the physical parts of a release, which are areas, applications, library types, and SYSLIB concatenations. These rules and relationships include.

- Definitions of the areas that make up the release.

- Rules that set limits on the flexibility of area rules that control functions like area approvals, check-in, retrieve, and blocking.

- Hierarchy of approvals required before the release can be installed.

- List of applications and library types that are included in the release.

- List of prior release containing applications and library types to be used in build processes, release audit, and checkout from release.

Release Application

Applications are joined to a release by an administrator, who also chooses what library types from each application are included in the release. By restricting library types in a release, administrators can build special purpose releases like on-line or batch releases.

Release application definitions also include:

- A specification of how certain library like-types are ordered in the SYSLIB library concatenations for build processes.

- Specification of related applications, which are applications that contain components necessary for building other applications.

Release Area

A release area is a set of libraries that represent a step in the consolidation of the components managed by the release. These libraries are used in SYSLIB concatenations for build processes in release packages, and they are used by release audit to validate release component relationships.

Each release must contain at least two release areas.

- Starting area -The point where components enter the release through release package check-in.

- Final area - The final stage of consolidation into a single set of library type based libraries. Components are installed into production from final release area libraries.

Release area definitions also include:

- Audit level for the area, which determines what out-of-sync conditions are allowed in the area, and what conditions trigger stage, recompile, or relink in release audit Auto Resolve.

- Rules that determine the latitude allowed to developers and release managers as they execute area functions like approvals, check-in, retrieve, and blocking.

- Rules that may restrict who can execute area functions like check-in, retrieve, and blocking.

- List of approvers that may be required before components can be checked in to an area or before the release life cycle can proceed to the next area.

Release Package

A planned simple change package becomes a release package when it is attached to a particular release and its starting area is defined. The install date for a release package must fall within the range of the install dates defined for the release. Unplanned, temporary, participating, complex, and super packages cannot be attached to a release.

When a package is attached to a release, ERO takes control of building the SYSLIB concatenations for stage, recompile, and relink jobs. If components in area libraries must be changed, a developer makes the change in package staging libraries using familiar ChangeMan ZMF procedures. The component is then checked in to release again.

Anatomy of a Release

The diagram on the next page shows the relationship between a release and its areas, applications, and library types for area libraries.
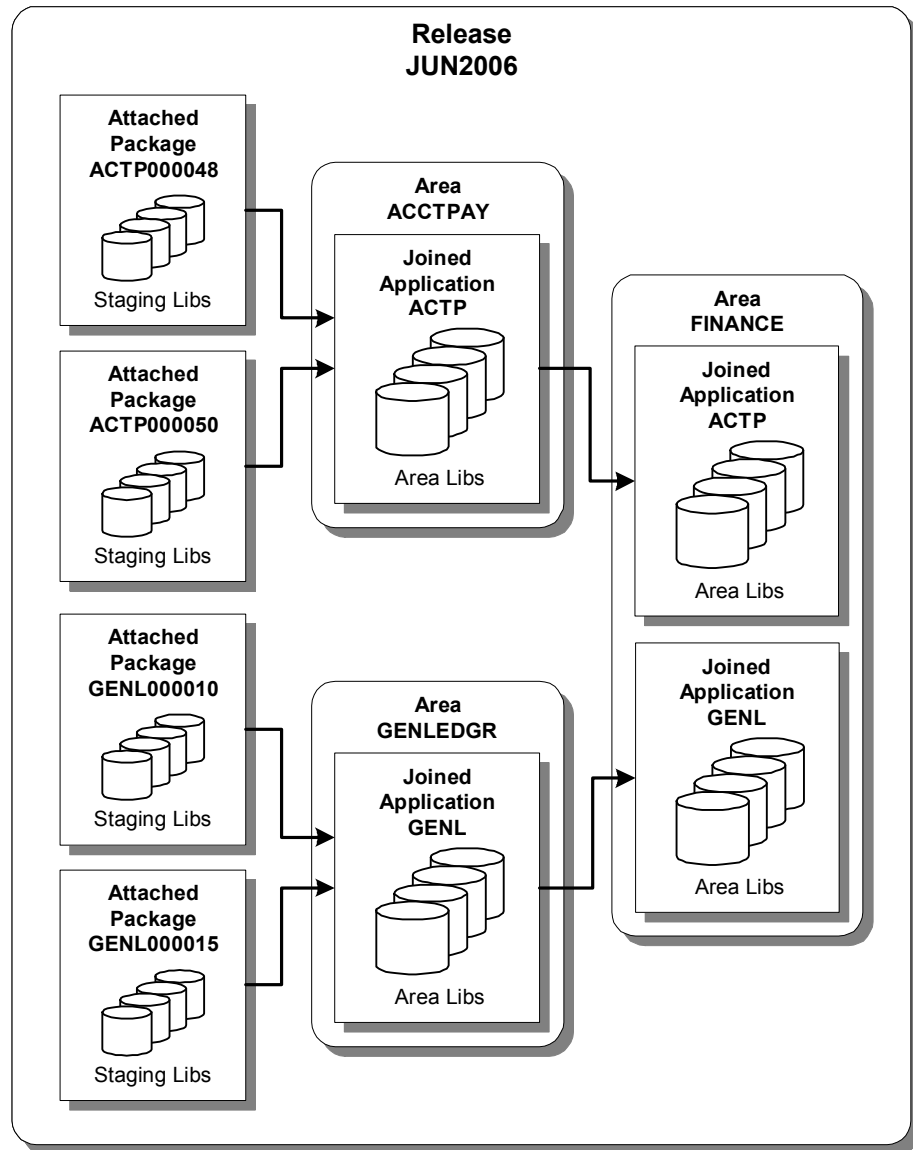
Release Lifecycle

An ERO release has a life cycle that overlaps the package life cycle in the base ChangeMan ZMF product. This section describes the ERO release life cycle and its relationship to change packages you attach to a release.

Create a Release

ChangeMan ZMF local administrators and ERO release managers make ERO administration entries to create a release.

Release managers execute these ERO functions to create a release:

- Create a release

- Add Install Approvers

- Create Release Areas

- Add Area Approvers

- Associate prior releases

ChangeMan ZMF local (application) administrators execute these ERO functions to complete release configuration:

- Join Application to a Release

- Define Application Library Types

- Define SYSLIB Concatenations

- Define Area Promotion

Attach a Package to Release

Attaching a change package to a release is the first step in bringing components that you are developing or changing into the ERO release life cycle.

After attaching your package to a release, the components in your package remain under package control, and you execute standard change package life cycle functions to prepare these components for installation into production. However, ERO alters package and component behavior.

- You cannot change the package install date so that it falls outside the range of the release install date.

- You can check out components from ERO release area libraries in the release your package is attached to, or you can check out components from area libraries in prior releases.

- Release area libraries for your application and release area libraries for related applications defined in your release are included in SYSLIB concatenations when you stage, recompile, and relink components in your package.

- Install JCL in the package X node library is created when the release is blocked, not when the package is frozen.

- Components are installed from release final area libraries, not from package staging libraries.

Notify Area Check-in Approvers

Check-in approval opens a release area for package or area check-in.

Check-in approval notification starts the check-in approval process. Check-in approvals cannot be entered until the check-in approval notification function is executed, even if there are no notifications defined for any of the approvers.

If the approval rule for an area is set to require check-in approval, and there are no check-in approvers defined for the area, execution of the check-in approval notification function sets the check-in approval flag to Y.

Approve Area Check-in

Check-in is an administrative process that grants permission for developers or release managers to populate the libraries for an area through the check-in function. Check-in approval can be used to certify that release areas and applications are properly considered by administrators and release managers.

The requirement for check-in approval is determined by the area approval rule. Check-in approvals cannot be entered until the check-in approval notification function is executed, even if there are no notifications defined for any of the approvers.

If a check-in approver rejects the area, you must execute the Reset Check-in Approvers function. All check-in approvals entered up to that point are cleared. You must initiate the check-in approver notification process, and then enter all check-in approvals again.

Check-in a Package

Package check-in brings components from a package attached to a release into the starting subsystem area defined for that package. This step begins the integration of your package components with other release components that are in development in other change packages across the enterprise.

Package check-in accomplishes these objectives:

- Allocates area libraries for all areas in the release for the library types that are contained in the package.

- Populates starting release area libraries.

- Makes the components available to build processes in other packages in the same application that are attached to the release.

- Makes the components available to build processes in packages in other applications that have this application defined as a related application.

- Starts the process of resolving multiple versions of the same component that are in development at the same time and that will be installed at the same time.

NOTE The base ChangeMan ZMF product encourages you to manage concurrent development by displaying checkout conflict messages and concurrent development messages. In contrast, ERO guarantees that a release will contain only one version of a component in an application by funneling all components through release area libraries that eventually converge in one set of libraries in the final system area.

Check-in is subject to these rules and conditions.

- The target release and area for package check-in are predetermined. You define the release and starting area when you attach a package to a release.

- The check-in rule for the target area determines whether your package must be audited or approved before package check-in is allowed. The check-in rule can also restrict who can perform check-in to the target area.

- You can check-in all package components, or you can check-in selected package components.

- The library type of a package component must be defined to the application joined to the target release. Your ChangeMan ZMF administrator makes those definitions. If the library type is not defined in the joined application, check-in is skipped for those components.

- If a package component already exists in the target area library, you must explicitly override a "check-in components disallowed" condition to overlay the component.

- A component in an area library can only be overlaid by the person who checked in the component, and it can only be overlaid if it is checked in from the same package. This rule can be overridden in the definition of the target area.

- If a component that already exists in an area library cannot be overlaid, it must be retrieved before it can be checked in again.

Check-in an Area

Area check-in copies components from the libraries for one area into the libraries for another area. Check-in advances release components through the hierarchy of areas that progressively integrate release components.

Area check-in accomplishes these objectives:

- Populates the area libraries for the next area defined for the release.

- Makes the components available to build processes in other packages in the same application that are attached to the release.

- Makes the components available to build processes in other packages in the same application that define this release as a prior release.

- Makes the components available to build processes in packages in other applications if this application is defined as a related application.

- Continues the process of squeezing out multiple versions of the same component that are in development at the same time and are intended for install at the same time.

> **NOTE** The base ChangeMan ZMF product Checkout encourages you to manage different versions of the same component that are in development at the same time by displaying checkout conflict messages and concurrent development messages. In contrast, ERO guarantees that a release will contain only one version of a component in an application by funneling all components through release area libraries that eventually converge in a set of libraries for the final system area.

Check-in is subject to these rules and conditions.

- The target area for area check-in is predetermined. When you define an area in a release, you specify the next area.

- The check-in rule for the target area determines whether the area must be audited or blocked before check-in to the next area is allowed.

- The check-in rule for the target area can restrict who can perform check-in to the target area.

- A single check-in operation copies components from a set of release area application libraries into the corresponding set of area application libraries in the next area. If there are several applications joined to a release, you perform multiple check-in operations to copy all area components to the next area.

- You can check-in all components from a selected application, or you can check-in selected components from a selected application.

- If a component already exists in the target area library, you must explicitly override a "check-in components disallowed" condition to overlay the component.

- A component in a target area library can only be overlaid by the person who last checked in the component to the target area. This rule can be overridden in the definition of the target area.

- If a component that already exists in an area library cannot be overlaid, it must be retrieved before it can be checked in again.

Audit an Area

ChangeMan ZMF maintains the integrity of the components and applications under ERO control through the Release Audit, which is more sophisticated than the package audit delivered with the ChangeMan ZMF base product. Release Audit examines the components in libraries for a particular release area, as well as libraries for other areas in the release, libraries in prior releases that will be installed sooner, and baseline libraries. It evaluates relationships between different versions of the same component, and it evaluates relationships between components and other components they include like copybooks and statically linked load modules.

See Chapter 10, "Auditing Release Areas" on page 311.

Block an Area

Blocking an area locks the area down to prevent further changes to area components. When an area is blocked, you cannot check-in components to the area.

The blocking rule for an area determines whether audit is required before the area can be blocked. The area blocking rule can also restrict who can block the area.

Other area rules can make release area functions contingent on the block status of an area. The retrieve rule for an area can be set to prohibit retrieve from an area that is blocked. The area check-in rule can require that an area be blocked before it can be checked in to the next area.

All areas must be blocked before a release can be blocked.

Notify Area Check-off Approvers

Check-off approval signifies that an area is ready for check-in to the next area.

Check-off approval notification starts the check-off approval process. Check-off approvals cannot be entered until the check-off approval notification function is executed, even if there are no notifications defined for any of the approvers.

An area must be blocked to notify check-off approvers.

If the approval rule for an area is set to require check-off approval, and there are no check-off approvers defined for the area, execution of the check-off approval notification function will set the check-off approval flag to Y.

Approve Area Check-off

Check-off approval is an administrative function that grants permission to check-in the contents of area libraries to the next area.

The requirement for check-off approval is determined by the area approval rule. Check-off approvals cannot be entered until the check-off approval notification function is executed, even if there are no notifications defined for any of the approvers.

> **NOTE** The requirement that the area be blocked before check-off approval notification can be executed overlaps the function of the area check-in rule that sets requirements for to the next area. One of the options of the area check-in rule is to require area block.

If a check-off approver rejects the area, you must unblock the area. All check-off approvals entered up to that point are cleared. You must initiate the check-off approver notification process, and then enter all check-off approvals again.

Block a Release

Blocking a release locks down the release and its areas in preparation for install. All areas in a release must be blocked before a release can be blocked, and all packages attached to the release must be approved.

When you attempt to block a release, ERO executes a pre-install test to validate the release and the contents of the final release area. (Release components are installed from final area libraries.) These are some of the conditions that are detected in the pre-install test.

- Install date of attached package outside of the release install date range.

- Attached package not in APR status.

- Component checked in from an attached package, but not checked in to the final release area, and not deleted from the package.

- Different versions of a component in the attached package and the final release area.

- Attached package that has no components.

If the pre-install test detects no errors, notification is sent to the approvers with the lowest install approver order number, and the release is blocked. Install JCL in the package X node library is created when the release is blocked.

Approve a Release for Install

After a release is blocked, all install approvers must enter their approvals before the release will install.

When the last approval is entered, the release status is changed to APR.

Backing Out a Release

Release backout first verifies that all packages attached to the release are in a state that permits package backout. Then release backout submits package backout jobs from the X node libraries for the packages attached to the release. After all packages have been backed out, the packages and the release are in BAK status.

Reverting Release

Revert release clears all release install approvals, unblocks the release, and changes the status of the release from APR or BAK to DEV status. The status of release areas is not changed, and packages attached to the release are not automatically reverted.

Other ERO Functions

Detach Package From Release

When you detach a package from an ERO release, you sever all relationships to the release, its areas, and area libraries. You break relationships to components in area libraries for that release, and you break relationships to components in area libraries for releases that define that release as a prior release.

> **NOTE** You cannot detach a package from a release if there are components from your package in area libraries for the release. Retrieve package components from all areas before you detach the package.

Check Out Package Components from Release

Checkout from release area libraries gives you the same advantage as checkout from promotion libraries in the base ChangeMan ZMF product: If you check out a version of the component that is scheduled for install before your version, you may be able to avoid an out-of-sync condition after the other version is installed. If you start your development where a previous development effort ended, you can avoid merging code into your new version.

Checkout from release offers you three choices:

1   Checkout from the starting area for your package in the current release.

2   Checkout from any area in the current release.

3   Checkout from any area in a prior release.

4   Checkout the latest version of the component in the current and prior releases.

Retrieve a Package

The retrieve package function removes all package components from the libraries for an area.

You must remove package components from area libraries to:

- Detach a package from a release.

- Check-in new versions of all package components from a different package.

> **NOTE** You cannot edit components in an area library. Even after your package is attached to a release and components are checked in, you change those components in the package staging libraries using ChangeMan ZMF base functions. You change a component in an area library by checking-in a new version to the area. Unless you were the last person to check in a component from the same package, you must retrieve the component from the area before checking in a new version.

Package retrieve is subject to these rules and conditions.

- The retrieve rule for the area determines whether you can retrieve components from the area if the area is blocked. The retrieve rule can also restrict who can perform retrieve from the area.

- Package retrieve removes all package components from the area. If you want to remove selected package components from the area, use the area retrieve function.

- Package retrieve only removes those components that originated in your package. Components in area libraries that originated in other change packages are not removed, even if you have components with the same name in your package.

- If you attempt to use package retrieve after the area retrieve function was used to remove all of your package components from an area, an error message is issued. However, the package checked in indicator is reset, and no problems will result.

Retrieve from an Area

The retrieve area function removes components from area libraries.

You must retrieve components from area libraries to:

- Detach a package from a release.

- Check-in a new version of the component from a different package.

- Check-in a component by a person different from the person who last checked in the component.

> **NOTE** You cannot edit components in an area library. After your package is attached to a release and components are checked in, you change those components in package staging libraries using ChangeMan ZMF base functions. You can only change a component in an area library by checking-in a new version to the area. Unless you were the last person to check in a component from the same package, you must retrieve the component from the area before checking in a new version.

Area retrieve is subject to these rules and conditions.

- The retrieve rule for an area determines whether you can retrieve from the area if it is blocked. The retrieve rule can also restrict who can perform retrieve from the area.

- You can retrieve all components in an area or you can retrieve selected components. If you want to remove all components that originated in a particular package, use the package retrieve function.

■ A single area retrieve operation removes components from a set of release area application libraries. If there are several applications joined to a release, you perform multiple retrieve operations to remove all components from the area.

Test an Area

The ERO test area function compares the contents of an area to the contents of packages attached to the release to find mismatches. Error conditions are displayed online.

The contents of release areas can conflict with the contents of packages attached to a release as you consolidate subsystem areas into system areas, and as you change package components to fix errors found in testing. When you block a release, a test is executed to detect mismatches between the final release area and release packages. You can find these errors earlier in the release life cycle with the test area function.

These are some of the conditions that are detected by the test area function.

■ A component in the tested area is a different version than the component in the package from which it was checked in.

■ An attached package contains a component that was checked in to the tested area from a different package.

■ An attached package has no components.

■ A component was checked in from an attached package but not checked in to the tested area.

Unblock an Area

Unblocking an area unlocks the area for further changes to area components. When an area is blocked, you cannot check-in components to the area.

Unblocking an area also clears any check-off approvals entered up to that point.

The area blocking rule can restrict who can unblock the area.

Test a Release

The ERO test release function compares the contents of the final system area to the contents of packages attached to the release to find mismatches. Error conditions are displayed online.

The contents of the final area can conflict with the contents of packages attached to a release as you consolidate subsystem areas into system areas, and as you change package components to fix errors found in testing. When you block a release, a test is executed to detect mismatches between the final release area and release packages. You can find these errors earlier in the release life cycle with the test release function.

These are some of the conditions that are detected by the test area function.

■ A component in the final area is a different version than the component in the package from which it was checked in.

■ An attached package contains a component that was checked in to the final area from a different package.

- An attached package has no components.

- A component was checked in from an attached package but not checked in to the final release area.

Unblock a Release

Unblocking a release unlocks the release for further changes. Unblocking a release does not unblock the areas in the release. You must unblock release areas to change release components.

About Long Names in ERO

Component names in USS file systems can be 256 characters long, and path names can be 1024 characters long. Topic "Working with Long Fields in ISPF" in the *ChangeMan ZMF User's Guide* describes three ways users can see a long component or path name on ZMF ISPF panels whose total width is limited to 80 characters.

- Scroll in the panel field

- Zoom in on the field with EXPAND

- Display an alternate panel

ERO uses dynamic ISPF panels to make lists of components for functions like checkin, retrieve, query component, test area, test release, and promotion. ISPF does not support scroll RIGHT and LEFT on dynamic panels.

To display as much meaningful information in the long name column as possible where scroll is not supported, ERO right justifies long names on dynamic panels, truncating any extension on the file name.

In this example, release package JHFS00023 contains the following files with names that include a partial path:

```
/org/jdom/adapters/package.html
/org/jdom/filter/package.html
/org/jdom/input/package.html
/org/jdom/output/package.html
/org/jdom/package.html
/org/jdom/transform/package.html
```

See how these component names are displayed on ERO panel CMNCKI02, right justified with the extension *html* stripped off.

```
CMNCKI02  RELEASE CHECKIN JHFS000023 Components        Row  000001 Of  000006
Command ===> _____  Scroll ===> CSR

  Component        Type  Status  Changed         Procname User      Area
_ adapters/package HTH   ACTIVE  20101124 141227          USER240   ACCTPAY
_ m/filter/package HTH   ACTIVE  20101124 141231          USER240   ACCTPAY
_ om/input/package HTH   ACTIVE  20101124 141232          USER240   ACCTPAY
_ m/output/package HTH   ACTIVE  20101124 141234          USER240   ACCTPAY
_ org/jdom/package HTH   ACTIVE  20101124 141235          USER240   ACCTPAY
_ ransform/package HTH   ACTIVE  20101124 141237          USER240   ACCTPAY
****************************** Bottom of Data ******************************
```

NOTE Long names on ERO dynamic panels may be displayed using the PF4 zoom function to display the entire name in a pop-up window.

Chapter 2
Implementation Considerations

This chapter discusses issues you must consider before implementing the Enterprise Release Option of Serena ChangeMan ZMF.

ERO Not Compatible With Reusable ASIDs

ChangeMan ZMF ERO calls Db2, which is not compatible with reusable ASIDs, so ERO is not compatible with reusable ASIDs. If you use z/OS START command parameter REUSASID=YES to start a ZMF instance where ERO is licensed, ERO is disabled and does not appear in ZMF menus. The following message is displayed in SERPRINT:

CMN_302I CMNSTART ERO has been disabled: Server started with reusable ASID

To use ERO, restart the ZMF instance without the REUSASID=YES parameter in the START command.

ChangeMan ZMF Application Configuration

Serena ChangeMan ZMF is designed to be flexible so that customers can overlay their existing development and change management processes with the rules based, process-driven infrastructure of ChangeMan ZMF.

ERO requires additional infrastructure to manage components from multiple packages in a release and to manage multiple related releases simultaneously. Three important ERO tools are:

- Automatic determination of SYSLIB concatenations for build processes.

- Dynamic maintenance of relationships between the components

- Fast and accurate release audit, with automatic resolution of out-of-sync conditions.

To use these tools, you must observe certain restrictions on the configuration of ChangeMan ZMF applications and library-types that you want to include in ERO releases.

Segregate Related Components

To use ERO, you must segregate some kinds of related components in separate baseline libraries.

Segregate source-copy components

An application in an ERO release cannot mix like-source and like-copy components in the same baseline library. Segregate like-copy and like-source components in different baseline libraries. Like-copy components that COPY or INCLUDE other like-copy components are stored in the like-copy baseline library.

Two or more applications are permitted to share the same like-source baseline library or the same like-copy baseline library.

Segregate load-load components

A composite load module is an executable load that is composed of statically linked programs. Composite load modules can be bound from object modules, and they can be bound from program load modules.

An application in an ERO release cannot mix composite load modules and load modules that are statically linked to create the composites. Segregate composite load modules in a baseline that is different from the baseline that contains the load modules that are statically linked to create composites.

Composite load modules can reside in the same baseline library as main program load modules that dynamically call subprograms, and subprogram load modules that are called dynamically.

Two or more applications are permitted to share the same baseline library for composite load modules and the same baseline library for program load that will be statically linked into composites.

Use NCAL for Statically Linked Subprogram Load

Serena recommends that you use the "no automatic library call" option (NCAL) to bind programs that will be statically linked later into a composite load. Because their external references are not resolved, NCAL load modules are not executable.

You build executable composite load modules from NCAL load modules using either:

- INCLUDE link edit (binder) control statements to explicitly tell the binder what NCAL modules to statically link, or

- Default "automatic library call" (CALL) binder option that tells the binder to search libraries in the SYSLIB concatenation to resolve external references. You include the NCAL library in the SYSLIB concatenation.

Linking Composite Loads

If you use the automatic library call facility without any binder control statements, you can bind main programs directly into your executable target load library type without first binding them into an NCAL target load library type.

If you use INCLUDE binder control statements, and if the name of the member containing these control statements is the same as the name of the main program source member, you can bind the main program directly into your executable target load library type without first binding it into an NCAL load.

If the name of the member containing the INCLUDE binder control statements is different from the main program source name, but the same as the composite load module name, you must bind the main program first as NCAL, then use the ChangeMan ZMF RELINK facility to process the bind control member to create the executable composite load.

Use Proper Like-Types in Library Type Definitions

Specify like-NCAL in library type definitions for libraries that contain NCAL load modules.

Specify like-load in library type definitions for libraries that contain the following kinds of load modules:

- Composite load modules

- Main program load modules that dynamically call subprograms

- Load modules for dynamically called subprograms

Specify like-object in library type definitions for libraries that contain object modules.

Combined Application Area Libraries

Using ERO Global Administration Options, you have two choices for defining the contents of release area libraries:

- Each joined application can have its own set of area libraries defined by library type.

- All joined applications can share the same set of area libraries defined by library type.

Area Libraries by Joined Application and Library Type

The ERO Option will allocate a separate set of area libraries by library type for each joined application if you include application as a DSNAME node in the release management dataset name pattern. Such a pattern would include these nodes, not necessarily in this order:

- High Level Qualifier

- Release Name

- Release Area Name

- Release Application Name

- Release Library Type (must be the last in the pattern)

Release components are isolated by application throughout the release life cycle, from the starting subsystem area through the final system area. Separate area libraries by application prevent you from overlaying a component with another component having the same name and library type from another joined application.

Area Libraries by Library Type Only

Starting with ChangeMan ZMF 5.5, the ERO Option will allocate one set of area libraries by library type if you exclude application from the release management dataset name pattern. Such a pattern would include these nodes, not necessarily in this order:

- High Level Qualifier

- Release Name

- Release Area Name

- Release Library Type (must be the last in the pattern)

Release components from all joined applications are combined by library type throughout the release life cycle, from the starting subsystem area through the final system area. However, ERO retains the application identity of components in a Db2 table so that check-in, checkout and retrieve functions are performed by application according to the application authority rules.

Effects of Combined Application Area Libraries

The effects of combining joined applications in release area libraries include:

- Fewer area libraries are allocated, which may save data center resources. The extent of resource savings depends on how many applications you join to an ERO release.

- If you eliminate related applications in SYSLIB definitions, the number of libraries in build process JCL may be reduced. This can be important if your SYSLIB concatenation in build JCL approaches the IBM limit of 128 extents.

- Build processes automatically share components across all applications joined to the release. In contrast, when you have separate application area libraries, you must specify related applications in SYSLIB definitions to share components between joined applications in build processing.

- Component sharing between joined applications is automatically all-way. For example, Application A can use Application B components in build processing, and Application B can use Application A components. In contrast, if you have separate application area libraries, and if you specify Application B as a related application in a SYSLIB definition for Application A, build processing for Application A will use components from Application B, but Application B build will not automatically use components from Application A.

Limit for SYSLIB Concatenation

ERO uses the settings you make in ERO Administration to concatenate libraries in build processing jobs. SYSLIB concatenations may contain area libraries from your release, area libraries from prior releases, and baseline libraries from joined applications.

If you have many areas in your release, and many prior releases, the number of DD statements in build processing can be large.

There is an IBM limit to the number of DD statements that are allowed in a concatenation of PDS libraries. In z/OS V1R9.0 DFSMS, the limit is defined as follows

> The sum of PDS extents, PDSEs, and UNIX directories must not exceed the concatenation limit of 255. Each UNIX directory is counted as 1 toward this concatenation limit. For example, you can concatenate 15 PDSs of 16 extents each with 8 PDSEs and 7 UNIX directories ((15 x 16) + 8 + 7 = 255 extents).

ERO Administration offers you ways to reduce the number of libraries included in SYSLIB concatenations. For example, if you have many different like-load library types, you can choose to include only those library types in a SYSLIB that you need to build a composite load for a particular like-source type.

Db2 Tables

ERO uses three Db2 tables to track release components, and it uses eleven Db2 tables to track relationships for Release Audit.

Db2 Space Calculations

Serena has a spreadsheet that helps you estimate the space you need for ERO Db2 tables. Contact Serena Customer Support and ask for the ERO Option Database DASD Space Estimator.

Performance Considerations

When you audit a release area, all data from the previous audit for that area is deleted from the release audit Db2 tables, and then data for the new audit is inserted. A release audit may delete and insert hundreds of thousands of rows for a large release.

All the Db2 tables are indexed for performance. However, it is quite usual for Db2 to choose not to use the indexes if it does not have up-to-date information on the data distribution in the tables. To provide this information and to update catalog statistics, your DBA should periodically monitor the Db2 catalog statistics for the ERO Db2 tablespaces, tables, and indexes and execute the Db2 RUNSTATS utility on a regular, scheduled basis against these tables.

It is particularly important that you execute RUNSTATS after the initial loading of the tables. If Db2 chooses not to use the indexes to access the tables, performance may be unacceptable.

Db2 Table Recovery

The ChangeMan ZMF ERO Db2 tables cannot be rebuilt from information in ChangeMan ZMF libraries. If ERO Db2 tables are lost or corrupted, use standard Db2 recovery techniques to restore the data.

Schedule regular image copies of the ERO tablespaces. Implement the same kind of recovery procedures for ChangeMan ZMF ERO Db2 tables that you use for other Db2 application tables.

Db2 Active Logs

ERO will generate additional Db2 activity which will result in additional logging to the active logs. The additional logging is dependent on the size of your releases and the frequency that you perform ERO tasks such as check-in, retrieve, and audit. Monitor this additional activity and adjust the size of your logs to fit your logging strategy.

Chapter 3
Installing ERO

This chapter tells you how to install and set up components of ChangeMan ZMF ERO.

Applying An ERO License

If you license the ERO Option at the same time that you license ChangeMan ZMF, the license for ERO is applied when you apply the license for the base product. You do not have to take further action to enable the ERO Option.

If you license the ERO Option after you apply licenses for ChangeMan ZMF and other selectable options, use the SER10TY™ License Manager to add a license for ERO. See the *SER10TY User Guide* for instructions on how to apply a license. The load modules, JCL, and other components that you need to run SER10TY are included in the SERCOMC libraries in the delivered ChangeMan ZMF software.

After you have applied a license, shut down the SERNET started task where ChangeMan ZMF runs and restart the task. Then, follow these steps to verify that the ERO Option is activated.

1   Connect to ChangeMan ZMF through the ISPF interface. The **Primary Option Menu** is displayed:

```
CMN@PRIM     Serena(R) ChangeMan(R) ZMF Primary Option Menu  SYS(6)
Option ===>

1  Build       Create, update and review package data
2  Freeze      Freeze or unfreeze a package
3  Promote     Promote or demote a package
4  Approve     Approve or reject a package
5  List        Display (to process) package list
6  Reports     Generate ChangeMan ZMF batch reports
7  Release     Extended Release Management
A  Admin       Perform administrative functions
B  Backout     Back out a package in production
C  M+R         Merge+Reconcile
D  Delete      Delete or undelete a package
L  Log         Browse the activity log
M  Monitor     Monitor internal scheduler or packages in limbo
N  Notify      Browse the Global Notification File
O  OFMlist     Online Forms package list
Q  Query       Query packages, components and relationships
R  Revert      Revert a package to DEV status
T  Tutorial    Display information about ChangeMan ZMF
X  Exit        Exit ChangeMan ZMF
```

2   If the **Primary Option Menu** includes option **7 Release**, then ChangeMan ZMF ERO is activated.

Defining Db2 Objects

Define Db2 objects for ChangeMan ZMF ERO, bind SQL, and grant authorization for the SERNET instance that runs ChangeMan ZMF in the development environment. You must have authority to create a database, create tablespaces, perform BIND commands, and issue grants.

You can define Db2 objects with batch jobs or SPUFI. The instructions here are based on the model JCL and DDL delivered in the CMNZMF CNTL library.

Model	Description
CMNDB2RA	Create eleven Release Audit reporting tables.
CMNDB2RM	Create the ERO database and three Release Management tables.
CMNDB2RP	Bind packages CMNx.CMNDB2RQ, CMNx.CMNRARTM, CMNx.CMNRARPT, and CMNx.CMNRA905.
CMNDB2RB	Bind plans CMNRAPLN and CMNRLSE.
CMNDB2RG	Grant authority on the ERO Db2 objects.

Copy the model jobs to a custom or work library before you edit the members so you can preserve the originals in case your modifications fail. Customize the model DDL to comply with your standards for Db2 databases, tablespaces, indexes, storage group names, and other Db2 objects.

Define Release Audit Tables

Follow these steps to define a new database and eleven Db2 Release Audit tables.

1 Copy model JCL member CMNDB2RA from the vendor CMNZMF CNTL library into your custom CNTL library.

2 Code your JOB statement at the top.

3 Code your values for placeholders in lower case code.

Variable	Value
vrm or vr	Db2 Version, Release, and Modification level. Example: 610 for Db2 Version 6, Release 1, Modification 0.
dsnvrm DSNvrm	High level qualifier for Db2 system or runtime library with imbedded version.
ssss	Db2 subsystem ID where the Release Audit tables will be defined.
auth-id	Userid that has been granted sufficient authority to execute the Db2 commands in this job.
database	Name of the Db2 database where the Release Audit tables will be defined.
stogrup	Db2 storage group.
PRIQTY nn	Minimum primary space allocation for a Db2-managed dataset, where nn is in kilobytes.
SECQTY nn	Minimum secondary space allocation for a Db2-managed dataset, where nn is in kilobytes.
audspace01 - audspace11	Names of the Db2 table spaces where the Release Audit tables will be defined. There are eleven tables defined in this job.
x	One-character subsystem ID of the SERNET started task that will use the tables.
server	Userid of the SERNET started task that will load the Release Audit tables.

4   Delete the DROP DATABASE and CREATE DATABASE if you will define the new table spaces in an existing database.

5   Submit member CMNDB2RA to define the Release Audit tables.

6   After the job completes, examine the SYSPRINT output dataset to verify that all Release Audit tables were defined successfully.

Define Release Management Tables

Follow these steps to define three Db2 Release Management tables. This job assumes that you defined a new database when you defined the Release Audit tables, or that you are using another existing database.

1   Copy model JCL member CMNDB2RM from the vendor CMNZMF CNTL library into your custom CNTL library.

2   Code your JOB statement at the top.

3   Code your values for placeholders in lower case code.

Variable	Value
vrm or vr	Db2 Version, Release, and Modification level. Example: 610 for Db2 Version 6, Release 1, Modification 0.
dsnvrm DSNvrm	High level qualifier for Db2 system or runtime library with imbedded version.
ssss	Db2 subsystem ID where the Release Management tables will be defined.
auth-id	Userid that has been granted sufficient authority to execute the Db2 commands in this job.
database	Name of the Db2 database where the Release Management tables will be defined.
stogrup	Db2 storage group.
PRIQTY nn	Minimum primary space allocation for a Db2-managed dataset, where nn is in kilobytes.
SECQTY nn	Minimum secondary space allocation for a Db2-managed dataset, where nn is in kilobytes.
erospace01 - erospace03	Names of the Db2 table spaces where the Release Management tables will be defined. There are three tables defined in this job.
x	One-character subsystem ID of the SERNET started task that will use the tables.
server	Userid of the SERNET started task that will load the Release Management tables.

4   Submit member CMNDB2RM to define the Release Management tables.

5   After the job completes, examine the SYSPRINT output dataset to verify that all Release Management tables were defined successfully.

Bind ERO DBRM

All ChangeMan ZMF Db2 programs are precompiled with VERSION(AUTO) so you can have multiple versions of the package in the Db2 catalog.

Follow these steps to bind the SQL in programs CMNDB2RQ, CMNRARTM, CMNRARPT, and CMNRA905 into Db2 packages.

1 Copy model JCL member CMNDB2RP from the vendor CMNZMF CNTL library into your custom CNTL library.

2 Code your JOB statement at the top.

3 Code your values for placeholders in lower case code.

Variable	Value
vrm or vr	Db2 Version, Release, and Modification level. Example: 610 for Db2 Version 6, Release 1, Modification 0.
DSN*vrm*	High level qualifier for Db2 system library with imbedded version.
ssss	Db2 subsystem ID where the Impact Analysis table is defined.
x	One-character subsystem ID of the SERNET started task running the ChangeMan ZMF development instance.

4 Change the DBRMLIB DD statement to point to the vendor CMNZMF DBRMLIB library.

5 Submit member CMNDB2RP to bind SQL for ChangeMan ZMF ERO.

6 After the job completes, examine the SYSTSPRT output dataset to verify that the BIND PACKAGE commands were successful.

Bind ERO Plans

Follow these steps to bind collection IDs for ChangeMan ZMF ERO to plans CMNRAPLN, CMNRLSE, and CMNAUDIT.

> **NOTE** The Db2 package for program CMNDB2SQ is bound to plan CMNRLSE. This program and its DBRM are delivered with the ChangeMan ZMF Db2 Option where it is also bound to plan CMNPLAN.

1 Copy model JCL member CMNDB2RB from the vendor CMNZMF CNTL library into your custom CNTL library.

2 Code your JOB statement at the top.

3 Code your values for placeholders in lower case code.

Variable	Value
vrm or vr	Db2 Version, Release, and Modification level. Example: 610 for Db2 Version 6, Release 1, Modification 0.
DSN*vrm*	High level qualifier for Db2 system library with imbedded version. Example DSN610 for Version 6, Release 1, Modification 0.

Variable	Value
ssss	Db2 subsystem ID where the Impact Analysis table is defined.
x	One-character subsystem ID of the SERNET started task that will use the table.

4   Submit member CMNDB2RB to bind collection IDs for ChangeMan ZMF ERO to plans CMNRLSE and CMNRAPLN.

5   After the job completes, examine both SYSTSPRT output datasets to verify that the BIND PLAN commands were successful.

Grant Authority to Development Started Task

Follow these steps to grant authorization to the SERNET started task userid to execute plans CMNRAPLN and CMNRLSE and their packages.

1   Copy model JCL member CMNDB2RG from the vendor CMNZMF CNTL library into your custom CNTL library.

2   Code your JOB statement at the top.

3   Code your values for placeholders in lower case code.

Variable	Value
vrm or vr	Db2 Version, Release, and Modification level. Example: 810 for Db2 Version 8, Release 1, Modification 0.
DSN*vrm*	High level qualifier for Db2 system library with imbedded version. Example DSN810 for Version 8, Release 1, Modification 0.
ssss	Db2 subsystem ID where the Db2 objects are defined.
x	One-character subsystem ID of the SERNET started task that will use the table.
server	Userid of the SERNET started task that will load the Impact Analysis table.

4   Submit member CMNDB2RG to grant authorization to the SERNET started task userid.

5   After the job completes, examine the SYSTSPRT output dataset to verify that the grants were successful.

Verify or Define Db2 Physical Subsystem

You must identify to ChangeMan ZMF the Db2 subsystem where ERO tables are defined. This may already have been accomplished when the ChangeMan ZMF Db2 Option was installed.

Execute these steps to verify or enter the Db2 subsystem for your ALL, DP or D ChangeMan ZMF instance where ERO runs:

1   Follow these steps to access the Db2 physical subsystem definition:

   a   Type **=A.G.O.2** on any **Command** or **Option** line and press **Enter** to display the **Db2 Administration Options** panel.

    b On the **Db2 Administration Options** panel, choose option **1 Physical** to display the **Db2 Physical Subsystems** panel.

```
CMNGD2S0              Db2 Physical Subsystems - Part 1 of 2    Row 1 to 4 of 4
Command ===> _____     Scroll ===> CSR

    Db2
    subsys   Site      Db2 System Load Library
____ C105              SYS2.DB2810.SDSNLOAD_____
____ C105    SERT6     SYS2.DB2810.SDSNLOAD_____
____ C105    SERT6P1   SYS2.DB2810.SDSNLOAD_____
____ C105    SERT6P2   SYS2.DB2810.SDSNLOAD_____
****************************** Bottom of data ******************************
```

If the first row on this panel identifies the Db2 subsystem where you defined your ERO Db2 tables, and if the **Site** field for this entry is blank, press **PF3** to exit this panel, and go to the next task in installing ERO.

If the first row on this panel does not identify the Db2 subsystem where you defined your ERO Db2 tables, or if the **Site** field for this entry is not blank, then go to the next step in this procedure.

2 In the first row of the **Db2 Physical Subsystems Part 1 of 2** panel, define the Db2 physical subsystem for ERO tables:

    a In the **Db2 Subsys** field, type the ID of the Db2 subsystem where you defined your ERO Db2 tables.

    b Leave the **Site** field blank.

    c In the **Db2 Subsystem Load Library** field, type the dataset name of the Db2 system load library that is used for this Db2 subsystem. You may leave this field blank if you LINKLIST the Db2 system load library.

    d The jobcard information on the next panel is not used for access to ERO Db2 tables.

3 Press **PF3** to exit the **Db2 Physical Subsystems** panel.

Loading Error Types Table

The error type table for the Release Audit is populated with a batch job. Model JCL is delivered in the CNTL library unloaded from the ZMF installer.

Model	Description
CMNLDERT	Load data into the CMNx.CMNERRORTYPES table.

Table data is delivered in the ERRORTYP library unloaded from the ZMF installer.

Follow these steps to load error messages to the CMNERRORTYPES table.

1 Copy model JCL member CMNLDERT from the vendor CMNZMF CNTL library into your custom CNTL library.

2 Code your JOB statement at the top.

3   Code your values for placeholders in lower case code.

Variable	Value
vrm or vr	Db2 Version, Release, and Modification level. Example: 810 for Db2 Version 8, Release 1, Modification 0.
DSN*vrm* *dsnvrm*	High level qualifier for Db2 system library with imbedded version. Example DSN810 for Version 8, Release 1, Modification 0.
ssss	Db2 subsystem ID where the Db2 objects are defined.
x	One-character subsystem ID of the SERNET started task that will use the table.

4   Change the SYSUT1 DD statement to point to the vendor CMNZMF ERR library.

5   Submit member CMNLDERT to load error messages to table CMNERRORTYPES.

6   After the job completes, examine the SYSPRINT output dataset to verify that the table load was successful.

Modifying Skeletons

When you install the ERO Option, you must modify several skeletons. Preserve the original skeletons delivered from Micro Focus by copying the vendor versions from the CMNZMF SKELS library into your custom SKELS library, then make your changes in the custom library.

CMN$$RAU

Change this skeleton as follows:

INT=

INT=YES/NO (default is NO) instructs audit whether to perform an area integrity check ahead of starting audit processing. This will add extra time to the audit but will detect issues in the release such as empty area libraries where audit, which works directly on area contents, will not.

If INT=NO is in effect then the area integrity check is not performed.

If INT=YES is used and the area fails the integrity check then the area audit RC is set 12 and the audit finishes immediately after the integrity check has completed. Messages will be seen in SYSPRINT for the RLSAUDIT step, such as:

```
2017/12/06 09:05:58 - CMR1012I - Area integrity check is underway.
2017/12/06 09:05:58 - CMR1013A - Area failed integrity check, details follow.
Member missing   STEV/CPY: COPY001
Member missing   STEV/LOD: PGM1
Member missing   STEV/LST: PGM1
...
Member missing   STEV/SUB: SUB1
Member missing   STEV/SUS: SUB1
CMR1125I Analysis complete, release audit return code is: 12
```

If the check passes then you will just see:
2017/12/06 09:05:58 - CMR1012I - Area integrity check is underway.
2017/12/06 09:05:58 - CMR1014I - Audited area has passed the integrity check.

TRC=

TRC=YES/NO (default is NO) instructs audit whether to add extra information to the RLSAUDT step SYSPRINT dataset which may be of use in problem diagnosis. Usually only used at the request of Micro Focus customer support.

JSF=NO

JSF=YES/NO (default is NO) instructs audit whether to increment the jobname suffix for each job submitted by audit autoresolve.

CMN$$ARE

This skeleton creates a job to archive and delete a release. Follow the instructions in comments at the top of the skeleton for setting skeleton variables.

Transmit Selected Remote Promote Components

With the promotion skeletons delivered from Serena, when you selectively promote release area components to a remote site, all components in the area library are transmitted to the remote site. Only the components you selected for promotion are copied from the transmitted library to the promotion library.

Skeleton code is available to create remote promote JCL that sends only the components selected for promotion to the remote site.

If you want to enable the skeleton code that creates more efficient remote promotion jobs, follow the instructions in comments at the top of these skeletons.

    CMN$$RPM

    CMNIMRPM

    CMNRPMDL

If you want the more efficient remote promotion JCL to be created for all remote promotion jobs in ChangeMan ZMF, not just for ERO area promotion, follow the instructions in the comments at the top of this skeleton.

    CMN$$PMT

Enabling and Modifying Exits

Read the general information about exits in the "User Exits" chapter of the *ChangeMan ZMF Customization Guide*.

Preserve the original exit program code delivered from Micro Focus by copying the vendor version from the CMNZMF ASMSRC library into your custom ASMSRC library, then make your changes in the custom library.

CMNEX102

This exit is invoked by CMNDB2SQ to allow the user to define a collection id other than that assigned by ZMF.

If you have used this exit before, it should be noted that it now passes CMNx (where x is the ZMF subsystem character) in the exit field CMN$PKGI whereas it used to pass a blank.

CMNEX201

This exit is called by release audit to bypass processing for specified library types.

If you coded exit program CMNEX031 to bypass package audit processing for certain library types, you probably want to code CMNEX201 to bypass the same library types in release audit.

Defining Security Entities

Like the base ChangeMan ZMF product, access to ChangeMan ZMF ERO functions is controlled by security entities you define in your security system. Like a change package, a release has a set of approvers, and people are granted approval authority by granting them update authority to approver security entities defined in your security system.

Release Administration Entities

ChangeMan ZMF global and application administrators can execute release administration functions in ChangeMan ZMF ERO. In addition, security entities CMNRLSM and CMNRLSA grant authority to perform release administration functions without also granting global or application administration authority in the base ChangeMan ZMF system.

This table shows the security entities that control access to ChangeMan ZMF ERO administration functions:

Security Entity	Release Management Administration Option	Release Management Functions
CMNGBADM	Global Configuration	Define release management high level qualifier
CMNGBADM or CMNRLSM	Global Configuration	Define global approver list.

Security Entity	Release Management Administration Option	Release Management Functions
CMNGBADM or CMNRLSM	Release Configuration	Create, update, delete a release Create, update, delete a release area Add, update, delete a release area approver Add, update, delete a release install approver Add, update, delete a prior release
CMNLCADM or CMNRLSA	Application Configuration	Join, update, delete a release application Add, update, delete a release application library type Update release application SYSLIB library concatenation

Follow these rules when you define CMNRLSM and CMNRLSA in your security system:

- Define release administration security entities under the resource class that you use for other ChangeMan ZMF security entities such as CMNGBADM.

- Use the same security entity format that you use for entities that grant administration authority in the base ChangeMan ZMF product. For example, if the ChangeMan ZMF global administrator security entity for subsystem 6 is CMN6GBAD, then define the release administration security entities as CMN6RLSM and CMN6RLSA.

- Define release administration security entities with no authority, then permit userids UPDATE authority to one or both entities to grant the userids release administration privileges in ChangeMan ZMF ERO.

NOTE Some processing rules are relaxed for user IDs with UPDATE authority to the global administrator entity (CMNGBADM) or the release administrator (CMNRLSM) entity.

For example, when checking in a package with a component locked by someone else, the checkin is blocked for an ordinary user, but a global or release administrator can override the disallowed checkin.

Processing rules are not relaxed for user IDs with UPDATE authority to the application administrator entity (CMNLCADM) or the release application administrator (CMNRLSA) entity.

Approver Entities

Several approvals are required at different points in the release life cycle. Release approvers include:

Approver	Type	Description
Check-in	Area	A check-in approver signifies that an area is ready for check-in from a package or previous release area. Examples: An application administrator or release manager responsible for preparing release areas for use.
Check-off	Area	A check-off approver signifies that release activities in an area, such as check-in and testing, are complete. This approval is required to check-in components from the area into the next area. Examples: A development manager, testing manager, or business unit manager who reviews and approves test results from an area.

Approver	Type	Description
Install	Release	An install approver gives permission for the installation of a release. Examples: Development managers, testing managers, IT operations managers, and business unit managers.
Associated	Release or Area	A check-in, check-off, or install approver that is dynamically added to an area or release when a specified library type or other condition is present in the release or area. Examples: DBA approver that is added to area check-in approvers when there is at least one BIND command member in a release, or the Payroll manager, who is added to release install approvers when a release contains components from the PAYR application.

Follow these rules when you define approver entities in your security system:

- Define approver security entities under the resource class that you use for other ChangeMan ZMF security entities such as CMNGBADM.

- Define approver security entities with no authority, then permit userids UPDATE authority to the approver entities to grant the userids approver privileges.

Area Entities

You can restrict who can perform release area functions by defining additional security entities in your security system.

- Specify security entities in release area definitions.

- Set area rules that require a security check when anyone attempts to perform the restricted functions.

The use of area security entities is optional. The same security entity can be used to restrict multiple area functions and to restrict functions across multiple entities. Area security entities include:

Area Entity	Description
Blocking Entity	Restricts who can block and unblock a release area.
Check-in Entity	Restricts who can check-in a package into a release area or check-in an area into the next area.
Retrieve Entity	Restricts who can retrieve components, packages, and areas from a release area.

Follow these rules when you define area entities in your security system:

- Define area security entities under the resource class that you use for other ChangeMan ZMF security entities such as CMNGBADM.

- Define area security entities with no authority, then permit userids UPDATE authority to the area entities to grant area function privileges.

Chapter 4
Accessing ERO Functions

ChangeMan ZMF ERO functions are integrated into the ChangeMan ZMF multi-layered ISPF menu structure. Authorization to use ERO facilities is controlled by your security system.

Accessing ERO Administration

ERO administration is used to define global ERO parameters, create and modify releases, and define how application components are treated in a release.

In the ChangeMan ZMF user interface, ERO administration functions grouped with administration functions for the base ChangeMan ZMF product.

Access to ERO administration functions is restricted to ChangeMan ZMF global and application administrators and to ERO release and application administrators.

Follow these steps to access ERO administration functions:

1   On the ChangeMan ZMF **Primary Option Menu** panel, choose option **A Admin**, then press **Enter**. The **Administration Options** panel is displayed.

```
CMNADMON                    Administration Options
Option ===> _____

A   Application     Perform application administration functions
B   Application     Browse application administration configuration
G   Global          Perform global administration functions
H   Global          Browse global administration configuration
R   ERO             Perform release creation/administration functions
```

The **Administration Options** panel is built dynamically to show only those administration functions that you are authorized to browse or update.

> **NOTE** If option **A Admin** is not shown on the **Primary Option Menu** or option **R ERO** is not shown on the **Administration Options** panel, you are not authorized in your security system to update ERO administration. See "Defining Security Entities" on page 44, and then consult with your security administrator.

2   On the **Administration Options** panel, choose option **R ERO**, then press **Enter**. The **Release Management Administration Options** panel is displayed.

```
CMNRMADM            Release Management Configuration Options
Option ===> _____

A   Application     Join a Release. Define Library Types, SYSLIB Concatenations
                    and Promotion Sites/Levels.
G   Global          Define Global Release Approvals and Release High Level
                    Qualifier.
R   Release         Define Releases, Areas, Approvals and Prior Releases.
```

> **TIP** To jump directly to the **Release Management Administration** panel from anywhere in ChangeMan ZMF, type **=A.R** in the **Command** or **Option** line of any panel and press **Enter**.

3   From the Release Management Administration Options panel, choose one of these paths:

- Choose **G Global Configuration** and press **Enter** to go directly to the **Release Global Administration Options** panel. The functions available through this panel are described in Chapter 5, "Configuring ERO Global Administration" on page 63.

- Choose **R Release Configuration** and press **Enter**. The **Release List Parameters** panel is displayed where you can enter selection criteria to filter releases that are displayed on the **Release List** panel for release configuration functions. See the next step in this procedure.

- Choose **A Appl. Configuration** and press **Enter**. The **Release List Parameters** panel is displayed where you can enter selection criteria to filter releases that are displayed on the **Release List** panel for release application configuration functions. See the next step in this procedure.

4   If you chose either **R Release Configuration** or **A Appl. Configuration Release** on the **Management Administration Options** panel, the Release List Parameters panel is displayed (CMNRMRAS or CMNRMRSC).

```
CMNRMRAS                  Application Release Selection
Command ===> _____

Specify selection criteria:
Release . . . . . . . . . . _____    (Full name, pattern, blank, *)

Enter "/" to select option
Release status           / Dev   / Blk   / Apr   / Rej   / Dis
                         / Ins   / Bas   / Bak   / Del

Creator . . . . . . . . . . _____
Work request  . . . . . . . _____
Department  . . . . . . . . _____
Install date: From  . . . . _____    To . . . . _____    (YYYYMMDD)
Creation date: From . . . . _____    To . . . . _____    (YYYYMMDD)

Application . . . . . . . . ___        (Full name, pattern, blank, *)
```

This table describes the fields on the **Release List Parameters** panel.

Field	Description
Release	Type one of the following to select releases by release ID.
	Blank — Do not select by release ID.
	Release ID — Select one release ID.
	Mask — Select release IDs that fit a mask.

Field	Description
Release Status	Type Y to select releases with a particular status or to select releases that match one of several statuses. DEV — Development status - Releases that are in the process of being built. Applications may still join a release that is in DEV status. BLK — Block status - Releases that are blocked from any further development and awaiting approval for installation into production and baseline libraries. APR — Approve status - Releases that are approved for install by everyone on the approver list and awaiting for distribution, if applicable. REJ — Reject status - Releases that were rejected by one or more approvers on the approver list. DIS — Distribution status - Approved releases whose components are distributed to all remote sites specified in attached change packages. INS — Install status - Releases that are installed in all remote sites specified in attached change packages. BAS — Baseline status - Releases with all components baseline rippled in baseline libraries. BAK — Backout status - Releases that were in BAS status, then backed out with all components removed from production and baseline libraries. DEL — Deleted status - Releases that have been Memo Deleted.
Creator's TSO-ID List	Type one of the following to select releases by release creator. Blank — Do not select by release creator. Userid — Select one release creator by userid. Mask — Select release creator userids that fit a mask.
Work Request Number	Type one of the following to select releases by work request. Blank — Do not filter by work request number. Work Request — Select releases that have the same work request number. Mask — Select releases with work request numbers that fit a mask.
Department Number	Type one of the following to select releases by department. Blank — Do not filter by department number. Department — Select releases that have the same department number. Mask — Select releases with department numbers that fit a mask.
`Install date: From`	Type the low end of a range of release install dates to select. This date is inclusive. Blank is the same as 00000000.
`Install date: To`	Type the high end of a range of release install dates to select. This date is inclusive. Blank is the same as 99999999.
`Creation date: From`	Type the low end of a range of release creation dates to select. This date is inclusive. Blank is the same as 00000000.
`Creation date: To`	Type the high end of a range of release create dates to select. This date is inclusive. Blank is the same as 99999999.

Field	Description
Application Name	**Note**: This field is only on panel CMNRMRAS for release Application Configuration.
	Type one of the following to select releases by application mnemonics defined to the release.
	Blank Do not select by application.
	Application mnemonic Select by one application mnemonic.
	Mask Select application mnemonics that fit a mask.

5   Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank, and press **Enter**. The **Release List** panel is displayed.

This is the **Release List** panel for Release Configuration functions.

```
CMNRMRLS                     Release List                    Row 1 to 5 of 5
Command ===> _____        Scroll ===> CSR

    Release  Sta  Install  Work request       Dept      Aud  Creator  Created
__  FIN6410  DEV  20160328  WR 9010           FINANCE        USER015  20151126
__  FIN6420  DEV  20160328  WR 9020           FINANCE        USER015  20151126
__  FIN6430  DEV  20160328  WR 9030           FINANCE        USER015  20151126
__  FIN6440  DEV  20160429  WR 9030           FINANCE        USER015  20160111
__  FIN6450  DEV  20160527  WR 9050           FINANCE        USER015  20160113
***************************** Bottom of data ******************************
```

This is the **Release List** panel for release Application Configuration functions.

```
CMNRMRAL                     Release List                    Row 1 to 4 of 4
Command ===> _____        Scroll ===> CSR

    Release  Sta  Install  Work request       Dept      Aud  Creator  Pkgs
__  FIN6410  DEV  20160328  WR 9010           FINANCE        USER015  00002
__  FIN6420  DEV  20160328  WR 9020           FINANCE        USER015  00000
__  FIN6430  DEV  20160328  WR 9030           FINANCE        USER015  00002
__  FIN6440  DEV  20160429  WR 9030           FINANCE        USER015  00000
***************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

Press **PF1** to display a help panel that explains each field on the **Release List** panel.

This table describes the fields, commands, and line commands on the **Release List** panels shown above.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a release.
	CANCEL — Cancel panel without update. (Abbreviation: CA)
	LOCATE *release* — Locate a release. (Abbreviation: LO)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: RE)
	SORT *column* — Sort listed releases on the data in Release or Install columns. (Abbreviation: S)
	Valid column parameters: release, install, name (synonym for release), date (synonym for install).
Line Command	Type a line command on a release.
	Valid line commands for each **Release List** panel are no longer listed on the panel. Use the help panels to find them. They are:
	QR Query a release.
	UR Update an approver configuration.
	DR Explicitly delete a release.
	MD Memo delete a release.
	UD Undelete a memo deleted release definition.
	AR Display or update the area configurations for this release.
	IA Display or update the install approvers for this release.
	PR Display prior releases associated with this release.
	RL List all release allocated area libraries.
	DL Delete all release allocated area libraries.
	CR Copy a release forward to a new release.
	AD Archive and Delete a release.
Release	Displays the release ID.
Sta	Displays the release status.
	DEV — Development status - Releases that are in the process of being built. Applications may still join a release that is in DEV status.
	BLK — Block status - Releases that are blocked from any further development and awaiting approval for installation into production and baseline libraries.
	APR — Approve status - Releases that are approved for install by everyone on the approver list and awaiting for distribution, if applicable.
	REJ — Reject status - Releases that were rejected by one or more approvers on the approver list.
	DIS — Distribution status - Approved releases whose components are distributed to all remote sites specified in attached change packages.
	INS — Install status - Releases that are installed in all remote sites specified in attached change packages.
	BAS — Baseline status - Releases with all components baseline rippled in baseline libraries.
	BAK — Backout status - Releases that were in BAS status, then backed out with all components removed from production and baseline libraries.
	DEL — Deleted status - Releases that have been Memo Deleted.

Field	Description
Install	Displays the date portion of the install from date/time.
Work Request	Displays the contents of the release work request field.
Dept	Displays the contents of the release department field.
Aud	Displays the return code from the most recent audit of the final release area.
Creator	Displays the userid of the person who created the release.
Pkgs	**Note**: This field is only on panel CMNRMRLS for Release Configuration. Displays the number of packages attached to the release.
Created	**Note**: This field is only on panel CMNRMRAL for release Application Configuration. Displays the date that the release was created.

6   Valid line commands are no longer displayed on each **Release List** panel. They are listed on the help panels, or see the list above. Type the line command for the Release Configuration function or release Application Function you want to access and press **Enter**. The functions available on these **Release List** panels are described in Chapter 6, "Configuring Releases, Areas, and Applications" on page 83.

Security Authorization for ERO Configuration

Access to the three options on the **Release Management Administration Options** panel is controlled by security entities defined in your security system. These security entities are described in "Defining Security Entities" on page 44.

This is a summary of the authorization required to work in the three options in ERO administration:

Release Management Administration Option	Security Entity Required for Access
Global Configuration	CMNGBADM or CMNRLSM
Application Configuration	CMNLCADM or CMNRLSA
Release Configuration	CMNGBADM or CMNRLSM

NOTE In ERO global configuration, you must be permitted to security entity CMNGBADM to define the release management high level qualifier.

These security entities may be defined with the ChangeMan ZMF subsystem in the fourth position of the name. For example, if the ChangeMan ZMF global administrator security entity for subsystem 6, the release administrator entity would be CMN**6**RLSM.

Map of ERO Administration Functions

The previous topic in this chapter told you how to navigate to three options on the **Release Management Administration Options** panel. This topic will help you navigate from those options to the function you want to perform in ERO administration.

The tables in this section show the hierarchy of functions in ERO administration. There is one table for each of the options on the **Release Management Administration Options** panel:

- G Global Configuration

- A Application Configuration

- R Release Configuration

Map of Global Configuration Functions

This table shows the hierarchy of functions in release global administration.

G Global Configuration
Define release management global parameters
Define release management high level qualifier
Define release management dataset pattern
Define global list of approvals and associations
Create an approver
Query an approver (QA)
Update an approver (UA)
Delete an approver (DA)
Define library type associations for an approver (AA)

Map of Application Configuration Functions

This table shows the hierarchy of functions in release application configuration.

A Application Configuration
Join an application to a release (JR)
Query a release definition (QR)
Release Applications (RA)
Query a release application (QA)
Update a release application (UA)
Delete a release application (DA)
List releases where this application is joined (RL)
Library types (AL)
Add a library type from the Application Library Type List (*)
Query a library type definition (QL)
Update a library type definition (UL)
Delete a library type definition (DL)
SysLibs (AS)
Add a library type SYSLIB definition from the Application Library Type List (*)
Query a library type SYSLIB definition (QS)

A Application Configuration

Update a library type SYSLIB definition (US)

Delete a library type SYSLIB definition (DS)

Show the SYSLIB concatenation for a library type (SL)

Promotion (AP)

Add an area promotion definition (*)

Query an area promotion definition (QP)

Update an area promotion definition (UP)

Delete an area promotion definition (DP)

Map of Release Configuration Functions

This table shows the hierarchy of functions in release configuration.

R Release Configuration

Create a new release

Copy an existing release to create a new release (CR)

Query a release definition (QR)

Update a release definition (UR)

Memo delete a release (MD)

Undelete a memo deleted release (UD)

Archive/Delete a release with a batch job (AD)

Physically delete a release online (DR)

List release libraries (RL)

Delete release libraries (DL)

Install approvers (IA)

Add release install approvers from the global approver list (*)

Query release install approvers (QA)

Update release install approvers (UA)

Delete install approvers (DA)

Prior releases (PR)

Add a prior releases from a release list (*)

Query a prior release definition (QR)

Update a prior release definition (UR)

Delete a prior release (DR)

Areas (AR)

Create a release area

Query a release area definition (QA)

Update a release area definition (UA)

Delete a release area (DA)

R Release Configuration

> Reset/Query area component locks (CL)
>
> Reset the area-in-progress indicators (RS)
>
> Area approvers (AA)
>
>> Add an area approver from the global approver list (*)
>>
>> Query an area approver definition (QA)
>>
>> Update an area approver definition (UA)
>>
>> Delete an area approver (DA)

Accessing ERO Releases

After administrators define a release and join applications to the release, developers, approvers, managers, and others access the Primary Option Menu.

Generally, ChangeMan ZMF users will have the same kind of access to releases, areas, and packages that they have to change packages in the base ChangeMan ZMF product. Restricted authorization for certain release functions is explained in topic "Defining Security Entities" on page 44.

Follow these steps to find the release you want to work on:

1 On the ChangeMan ZMF **Primary Option Menu** panel, choose option **7 Release**, then press **Enter**. The **Release List Specification Parameters** panel is displayed.

```
CMNRMRFN              Release List Selection Parameters
Command ===> _____

Release List . . . . . .  _____
Enter "/" to select
Release Status          / Dev   / Blk   / Apr   / Rej   / Dis
                        / Ins   / Bas   / Bak   / Del
Work request . . . . . .  _____
Department . . . . . . .  _____
Install date: from . . . _____  to . . . _____  (yyyymmdd)
Creation date: from  . . _____  to . . . _____  (yyyymmdd)
Creator list:           (Blank, Full name or mask separated by ;)
_____
Application list:       (Blank, Full name or mask separated by ;)
_____
Approval entity list:   (Blank, Full name or mask separated by ;)
_____
Remote site list:       (Blank, Full name or mask separated by ;)
```

TIP To jump directly to the **Release List Specification Parameters** panel from anywhere in ChangeMan ZMF, type **=7** in the **Command** or **Option** line of any panel and press **Enter**.

This panel provides selection criteria that you use to choose specific releases or to select releases that pass one or more filters.

Press **PF1** to display a help panel that explains each field on the **Release List Specification Parameters** panel.

This table describes the fields on the **Release List Specification Parameters** panel.

Field	Description
Release ID	Type one of the following to select releases by release ID.
	Blank — Do not select by release ID.
	Release ID — Select one release ID.
	Release IDs separated by ; — Select release IDs that match one of several release IDs separated by semicolons.
	Mask — Select release IDs that fit a mask.
	Masks separated by ; — Select release IDs that fit one of several masks separated by semicolons.
Release Status	Type Y to select releases with a particular status or to select releases that match one of several statuses.
	DEV — Development status - Releases that are in the process of being built. Applications may still join a release that is in DEV status.
	BLK — Block status - Releases that are blocked from any further development and awaiting approval for installation into production and baseline libraries.
	APR — Approve status - Releases that are approved for install by everyone on the approver list and awaiting for distribution, if applicable.
	REJ — Reject status - Releases that were rejected by one or more approvers on the approver list.
	DIS — Distribution status - Approved releases whose components are distributed to all remote sites specified in attached change packages.
	INS — Install status - Releases that are installed in all remote sites specified in attached change packages.
	BAS — Baseline status - Releases with all components baseline rippled in baseline libraries.
	BAK — Backout status - Releases that were in BAS status, then backed out with all components removed from production and baseline libraries.
	DEL — Deleted status - Releases that have been Memo Deleted.
Work Request Number	Type one of the following to select releases by work request.
	Blank — Do not filter by work request number.
	Work Request — Select releases that have the same work request number.
	Mask — Select releases with work request numbers that fit a mask.
Department Number	Type one of the following to select releases by department.
	Blank — Do not filter by department number.
	Department — Select releases that have the same department number.
	Mask — Select releases with department numbers that fit a mask.
From Install Date	Type the low end of a range of release install dates to select. This date is inclusive. Blank is the same as 00000000.
To Install Date	Type the high end of a range of release install dates to select. This date is inclusive. Blank is the same as 99999999.

Field	Description
From Creation Date	Type the low end of a range of release creation dates to select. This date is inclusive. Blank is the same as 00000000.
To Creation Date	Type the high end of a range of release create dates to select. This date is inclusive. Blank is the same as 99999999.
Creator's TSO-ID List	Type one of the following to select releases by release creator.
	Blank — Do not select by release creator.
	Userid — Select one release creator by userid.
	Userids separated by ; — Select release creators that match one of several userids separated by semicolons.
	Mask — Select release creator userids that fit a mask.
	Masks separated by ; — Select release creator userids that fit one of several masks separated by semicolons.
Application Name List	Type one of the following to select releases by application mnemonics defined to the release.
	Blank — Do not select by application.
	Application mnemonic — Select by one application mnemonic.
	Application mnemonics separated by ; — Select applications that match one of several mnemonics separated by semicolons.
	Mask — Select application mnemonics that fit a mask.
	Masks separated by ; — Select applications that fit one of several masks separated by semicolons.
Approval Entity List	Type one of the following to select releases by install approver entities.
	Blank — Do not select by release install approver entity.
	Approval entity — Select by one install approver entity.
	Approval install entities separated by ; — Select install approver entities that match one of several entities separated by semicolons.
	Mask — Select install approver entities that fit a mask.
	Masks separated by ; — Select install approver entities that fit one of several masks separated by semicolons.

Field	Description	
Remote Site Name List	Type one of the following to select releases that contain packages that specify a particular site in their installation instructions.	
	Blank	Do not select by site name.
	Site	Select by one site name.
	Sites separated by ;	Select site names that match one of several names separated by semicolons.
	Mask	Select site names that fit a mask.
	Masks separated by ;	Select site names that fit one of several masks separated by semicolons.

2 Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**. The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                 Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00002
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00002
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Specification Parameters** panel and which have at least one attached package.

Press **PF1** to display a help panel that explains each field on the **Release List** panel.

This table describes the fields, commands, and line commands on the **Release List** panel shown above.

Field	Description	
Command	Type a command, or leave Command blank to type a Line Command on a release.	
	CANCEL	Cancel panel without update. (Abbreviation: CA)
	LOCATE *release*	Locate a release. (Abbreviation: LO)
	REFRESH	Refresh the panel display from the VSAM files. (Abbreviation: RE)
	SORT *column*	Sort listed releases on the data in Release or Install columns. (Abbreviation: S) Valid column parameters: release, install, name (synonym for release), date (synonym for install).

Field	Description
Line Command	Type a line command on a release. Valid line commands for each **Release List** panel are not listed on the panel. Use PF1 to display them. Here is a list: AP Approve a release. AR Release Area Functions. BB Block a release by submitting a batch job. BK Block a release. BO Backout a release. PK Release Package Functions. QC Query components in motion for this release. QR Query a release. RB View backout reasons. RJ View reject reasons. RR View revert reasons. RV Revert a release. TR Test release components against package components. UB Unblock a release.
Release	Displays the release ID.
Sta	Displays the release status. DEV Development status - Releases that are in the process of being built. Applications may still join a release that is in DEV status. BLK Block status - Releases that are blocked from any further development and awaiting approval for installation into production and baseline libraries. APR Approve status - Releases that are approved for install by everyone on the approver list and awaiting for distribution, if applicable. REJ Reject status - Releases that were rejected by one or more approvers on the approver list. DIS Distribution status - Approved releases whose components are distributed to all remote sites specified in attached change packages. INS Install status - Releases that are installed in all remote sites specified in attached change packages. BAS Baseline status - Releases with all components baseline rippled in baseline libraries. BAK Backout status - Releases that were in BAS status, then backed out with all components removed from production and baseline libraries. DEL Deleted status - Releases that have been Memo Deleted.
Install	Displays the date portion of the install from date/time.
Work Request	Displays the contents of the release work request field.
Dept	Displays the contents of the release department field.
Aud	Displays the return code from the most recent audit of the final release area.
Creator	Displays the userid of the person who created the release.
Pkgs	Displays the number of packages attached to the release.

Map of Release Functions

The previous topic in the chapter told you how to navigate to the **Release List**. This topic will help you navigate from the **Release List** panel to the function you want to perform for a release.

This table shows the hierarchy of functions that developer, approvers, managers, and other use to work with releases. Functions are listed in approximate release, area, and package life cycle order.

7   Release - Extended Release Management

Query release definition (QR)

Query release components (QC)

Test release components (TR)

Block release (BK)

Block release with batch job (BB)

Unblock release (UB)

Approve release (AP)

Backout release (BO)

Revert release (RV)

View release backout reasons (RB)

View release approver reject reasons (RJ)

View release revert reasons (RR)

Area Functions (AR)

> Query area definition (QA)
>
> Query area components (QC)
>
> Notify area check-in approvers (NI)
>
> Approve area check-in (AI)
>
> Reset area check-in approvals (RI)
>
> Check-in area components (CI)
>
> Retrieve area components (RT)
>
> Promote area components (PA)
>
> Demote area components (DA)
>
> Audit area (AU)
>
> Test area components (TA)
>
> Block area (BK)
>
> Unblock area (UB)
>
> Notify area check-off approvers (NO)
>
> Approve area check-off (AO)
>
> View area approver reject reasons (RJ)

Package Functions (PK)

> Query package information (QP)

7 Release - Extended Release Management

Update package control information (U1)

Update package description (U2)

Update package installation instructions (U3)

Update package site information and install date (U7)

Check out components from baseline/promotion (C1)

Check out components using component list copied forward (C2)

Check out components from release (C3)

Stage components from an external dataset (S1)

Stage components already in package (S2)

Specify parameters to select a subset of package components (S3)

Recompile source code from baseline/promotion libraries (RC)

Relink load module (RL)

Browse compressed listing (BL)

Promote package (base ZMF function) (BP)

Demote package (base ZMF function) (BD)

Promote package components in area library (PM)

Demote package components in area library (DM)

Audit package (AP)

Freeze package online (F1)

Freeze package with batch job (F2)

Selectively unfreeze or refreeze package components (F3)

Reset Freeze-In-Progress indicator (F4)

Approve/Reject package (A1)

Display package approver reject reasons (A2)

Reset Approval-In-Progress indicator (A4)

Re-submit installation JCL build request for package in APR status (A5)

Revert package back to development status (RV)

Check-in package contents to starting area (CI)

Retrieve package components from area (RP)

Retrieve package components from area with batch job (RB)

Detach package from release (DP)

Query package components in release areas (QC)

Chapter 5
Configuring ERO Global Administration

Use Release Global Administration to:

- Define the release high level qualifier

- Create a global approver list from which approvers are selected for each release.

> **NOTE** You must have global administrator or release manager authority to access Global Administration.

Defining the Release HLQ and dataset Pattern

The release management high level qualifier and dataset pattern are used in area library dataset names and in the dataset names of working libraries allocated and used for release audit. Area libraries are dynamically allocated for each release. The default format of release area library names is:

HLQ.ReleaseID.AreaID.ApplID.Libtype

The release management high level qualifier is set at the global level for all release area libraries in all releases. You set this parameter once when you first install ERO, and you do not change it.

You can use the release management dataset name pattern to:

- Omit the ApplID node to allocate a single area library for each library type, combining all applications in the same library.

- Rearrange order of dataset name nodes after the HLQ node.

The release management high level qualifier and dataset name pattern are established for each release when the release is created. You can change the release management high level qualifier in ERO Global parameters anytime, but existing releases will continue to allocate and use area libraries with the high level qualifier and dataset pattern that was in ERO Global parameters when the release was created.

Grant the started task where ERO runs ALTER access in your security system so that ERO can allocate, reallocate, update, and delete area libraries created with the release management high level qualifier and dataset name pattern.

> **NOTE** You must have global administrator authority to set the release high level qualifier or the dataset name pattern.

Follow these steps to define the release high level qualifier and the dataset name pattern:

1 On the **Release Global Administration Options** panel CMNRMGAD, choose **1 Parameters** and press **Enter**. The **Global Parameters** panel CMNRMGA1 is displayed.

```
CMNRMGA1                    Global Parameters
Command ===>

High level qualifier . . . . . . . . CMNTP
High level HFS pathname  . . . . . . /cmntp
Dataset pattern  . . . . . . . . . . HRAPL  (Default is HRAPL)
                                          H - High Level Qualifier
                                          R - Release Name
                                          A - Release Area Name
                                          P - Release Application Name
                                          L - Release Library Type
                                                (must be last in pattern)

Minimum Audit Level for all Releases . . . . 0     (0,1,2,3,4,5)
```

> **TIP** To jump directly to the **Global Parameters** panel from anywhere in ChangeMan ZMF, type **=A.R.G.1** in the **Command** or **Option** line of any panel and press **Enter**.

This table describes the fields on the **Global Parameters** panel.

Field	Description
High Level Qualifier	Type a valid dataset node name that conforms to your local standards for high level qualifiers.
High Level HFS Pathname	Type a valid HFS path name to be used as a prefix for all HFS area directory pathnames. You can leave this field blank if you are not using HFS for area files.
Dataset pattern	Type a 4- or 5-character dataset pattern for release area libraries. Arrange the letters in the order you want for the nodes in release area dataset names. The default pattern is HRAPL. H High Level Qualifier Required Must be first in pattern R Release Name Required A Release Area Name Required P Release Application Name Optional L Release Library Type Required Must be last in pattern
Minimum Audit Level for all Releases	Type one of the following values to specify a minimum audit level for all releases: 0 Audit is optional. 1 Audit is required and the return code must be less than 20 (audit failure). 2 Audit is required and the return code must be less than or equal to 12 (which indicates that there are out-of-sync errors within the audited area). 3 Audit is required and the return code must be less than or equal to 8 (which indicates that there are out-of-sync errors with respect to next areas/final areas in prior releases/baseline). 4 Audit is required and the return code must be less than or equal to 4 (which indicates that there are no out-of-sync errors but some duplicates exist). 5 Audit is required and the return code must be zero (which indicates that there are no out-of-sync errors or warnings). The value of this field determines the minimum audit level that the release administrator can set for a release, which in turn determines the minimum audit level that an area administrator can set for an area.

If you omit "P" (Release Application Name) from the dataset pattern, checked in components for all joined applications are combined in a single area library for each library type. See "Combined Application Area Libraries" on page 32 for a discussion of the consequences of combining applications in release area libraries.

2   Press **Enter** to process. Press **PF3** to return to the previous panel.

3   Define security rules for the release area libraries that will be allocated with the release management high level qualifier and dataset pattern. Grant ALTER access (create, update, delete) to the SERNET started task where ChangeMan ZMF runs.

---

4 Define dataset management (SMS) rules for the area libraries that will be allocated with the release management high level qualifier. The rules should be the same as the rules for staging libraries allocated and managed in the base ChangeMan ZMF product.

Defining the Global Approver List

All approvers are defined in release management administration at the global level. When you build a release, you select install, check-in, and check-off approvers from the global approver list. Associated approvers are automatically added from the global list to areas and releases that satisfy the criteria you specify in the global definition.

You can add approvers to the global approver list as needed, and you can update and delete approvers as your needs change. When you change an approver on the global approver list or delete an approver from the list, there is no effect on the approver that has already been added to a release or area.

Before an approver can be added to the global approver list, you define the approver security entity to your security system. See "Approver Entities" on page 45.

> **NOTE** You must have global administrator or release manager authority to create global approvers.

Creating a Global Approver

Follow these steps to create approvers in the global approver list:

1 On the **Release Global Administration Options** panel CMNRMGAD, choose option **2 Approvals** and press **Enter**. The **Global Approver List** panel CMNRMAPL is displayed.

```
CMNRMAPL                      Global Approver List              Row 1 to 5 of 5
Command ===> _____ Scroll ===> CSR

   Security    Order
   entity      no.      Description
__ ACCTPAY     0010     Accounts Payable Approver Manager
__ ACTPLEAD    0010     Lead Developer ACTP Application
__ CIO         0010     Chief Information Officer
__ FINACCTG    0010     Financial Accounting Manager
__ GENLEDGR    0010     General Ledger Manager
****************************** Bottom of data ******************************
```

> **TIP** To jump directly to the **Global Approver List** panel from anywhere in ChangeMan ZMF, type **=A.R.G.2** in the **Command** or **Option** line of any panel and press **Enter**.

When you first configure ERO, the **Global Approver List** panel is empty. After you define one or more global approvers, these approvers are displayed on the panel.

2 On the **Command** line of the **Global Approver List** panel, type a **CREATE** command in the format:

```
CREATE xxxxxxxx
```

where *xxxxxxxx* is an approver security entity defined in your security system. See "Defining Security Entities" on page 44 for information about defining security entities in your security system.

This example shows the **CREATE** command on the **Global Approver List** panel.

```
CMNRMAPL                   Global Approver List            Row 1 to 5 of 5
Command ===> create ops                                    Scroll ===> CSR

   Security    Order
   entity      no.      Description
__ ACCTPAY     0010     Accounts Payable Approver Manager
__ ACTPLEAD    0010     Lead Developer ACTP Application
__ CIO         0010     Chief Information Officer
__ FINACCTG    0010     Financial Accounting Manager
__ GENLEDGR    0010     General Ledger Manager
****************************** Bottom of data ******************************
```

3   When you have typed the create command, press **Enter**.

If the approver is not defined in your security system, the ISPF short message **Invalid Entity Name** is displayed, and long message **CMR0516A - Approval entity name is not defined in the security system.**. You cannot proceed with the approver definition until you define the approver as a security entity in your security system. See "Defining Security Entities" on page 44.

If the approver is defined in your security system, the *approver* **Global Approvers - Part 1 of 2** panel (CMNRMAP0) is displayed.

```
CMNRMAP0            OPS Global Approvers - Part 1 of 2
Command ===>

Description . . . . . . . .

Order number  . . . . . . .

Enter "/" to select option
  _ Install Approver
  _ Check-in Approver
  _ Check-off Approver
  _ Associated Approver

Approver List Count . . . .
```

This table describes the fields on the *approver* **Global Approvers - Part 1 of 2** panel.

Field	Description
Description	Type a description for the approver. This field is case sensitive.

Field	Description
Order Number	Type a 4-digit number to set a hierarchical order of approver notifications. Example: Approver order number 0001 is notified of a pending approval, enters their approval, then approver order number 0002 is notified of a pending approval. The approver order number can be changed after an approver is copied from the Global Approver List into a release. Values:
	0001-9999 Sets a hierarchical approver notification order.
	0000 Approver will not be notified and approval can be entered anytime.
Install Approver	Select this field to make this an install approver. When this approver is added to a release, approval is required to install the release. See "Approver Entities" on page 45.
Check-in Approver	Select this field to make this a check-in approver. When this approver is added to a release area, approval is required before check-in to the area is permitted. See "Approver Entities" on page 45.
Check-off Approver	Select this field to make this a check-off approver. When this approver is added to a release area, approval is required before the release life cycle can proceed beyond this area. See "Approver Entities" on page 45.
Associated Approver	Select this field to make this an associated approver. This indicator is paired with install, check-in, or check-off approver indicators so that approvers are automatically added to release or area approvers when the associated conditions are satisfied. See "Approver Entities" on page 45. Associated conditions are defined on the Associated Approvers panels described later in this section.
Approver List Count	Displays the number of approver notifications that have been entered on the ***approver* Global Approvers - Part 2 of 2** panel, which is the next panel in this series.

These rules and conditions apply when you create global approvers.

- If you do not select **Associated Approver**, you can select one or more of the remaining approver types, **Install Approver**, **Check-in Approver**, and/or **Check-off Approver**.

- If you select **Associated Approver,** you can select one of the other approver types, or you can select **Install Approver** and either **Check-in Approver** or **Check-off Approver**.

- For global approvers that are not associated approvers, all approver information can be updated when the approver is added to a release or area.

- Associated approvers cannot be updated after they are automatically added to a release or area.

- Information you enter on approver definition panels is stored in your ISPF profile and displayed the next time the panel is displayed to define the a new approver.

This example shows the completed *approver* **Global Approvers - Part 1 of 2** panel.

```
CMNRMAP0              OPS Global Approvers - Part 1 of 2
Command ===> _____

Description . . . . . . . . Data Center Operations

Order number  . . . . . . . 0020

Enter "/" to select option
  / Install Approver
  _ Check-in Approver
  / Check-off Approver
  / Associated Approver

Approver List Count . . . . 0001
```

4   After you type your entries on the *approver* **Global Approvers - Part 1 of 2** panel, press **Enter** to process those entries. The *approver* **Global Approvers - Part 2 of 2** panel (CMNRMAP1) is displayed.

```
CMNRMAP1              OPS Global Approvers - Part 2 of 2        Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

Approver: Data Center Operations
Order No: 0020

     Vehicle   User(s) to notify

_   _____   _____
******************************* Bottom of data *******************************
```

Use this panel to define notifications for the new approver.

This table defines the fields on the *approver* **Global Approvers - Part 2 of 2** panel.

Field	Description
Line Command	I Insert a new notification. R Repeat an existing notification. D Delete an existing notification.
Vehicle	Type a Notification Vehicle that is enabled in Global Administration Parameters. (MVSSEND is not explicitly enabled in Global Administration Parameters, but it is always available.) Refer to the ChangeMan ZMF Administration Guide for a list of the valid notification vehicles.
User(s) to Notify	Type one or more userids or e-mail addresses that are appropriate for the Notification Vehicle. This field is case sensitive.

These rules and conditions apply when you define notifications for a global approver.

- You are not required to define notifications for an approver.

- You can type multiple userids or e-mail addresses in the **User(s) to Notify** field.

- Use a delimiter that is appropriate for the notification vehicle to separate multiple userids or e-mail addresses. Use space as a delimiter for MVSSEND.

- If you cannot fit all userids or e-mail addresses for a notification vehicle on one row, create multiple rows with the same notification vehicle.

This example shows a completed *approver* **Global Approvers - Part 2 of 2** panel CMNRMAP1.

```
CMNRMAP1               OPS Global Approvers - Part 2 of 2        Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

Approver: Data Center Operations
Order No: 0020

    Vehicle   User(s) to notify
__  MVSSEND   USER020_____
****************************** Bottom of data ******************************
```

5   After you type your entries on the *approver* **Global Approvers - Part 2 of 2** panel, press **PF3**.

If you did *not* set the **Associated Approver** indicator to **Y** on the *approver* **Global Approvers - Part 1 of 2** panel, you are returned to the **Global Release Management Approver List** panel CMNRMAPL, where the new approver is displayed.

```
CMNRMAPL                     Global Approver List    Global Approver Created
Command ===> _____ Scroll ===> CSR

    Security  Order
__  entity    no.     Description
__  ACCTPAY   0010    Accounts Payable Approver Manager
__  ACTPLEAD  0010    Lead Developer ACTP Application
__  CIO       0010    Chief Information Officer
__  FINACCTG  0010    Financial Accounting Manager
__  GENLEDGR  0010    General Ledger Manager
__  OPS       0020    Data Center Operations
****************************** Bottom of data ******************************
...
    +------------------------------------------------------------+
    | CMR6029A - Global Approver OPS has been successfully created. |
    +------------------------------------------------------------+
```

If you *did* set the **Associated Approver** indicator to **Y** on the *approver* **Global Approvers - Part 1 of 2** panel, the **GLBL - Library Selection List** panel (CMNRMLAL) is displayed.

```
CMNRMLAL                 GLBL Library Selection List          Row 1 to 38 of 41
Command ===> _____ Scroll ===> CSR

    Type Request   Description
_   CLS            CLIST
_   CPY            Copybooks
_   CP2            Copybooks for Utilities
_   CTC            Control Statements
_   DBB            Db2 BIND PLAN Commands
_   DBR            Db2 DBRM
_   DOC            Documentation
_   HTH            HFS resident HTML
_   JAR            Java Archives
_   JCF            Java Class files
s   JCL            Execution JCL
_   JCT            Java JAR Build Control
_   JVL            HFS - JAVA executable class
_   JVS            HFS - JAVA source type
_   JVT            HFS - text type
...
```

Use this panel to select the library types that are associated with this approver.

This table describes the fields on the **GLBL Library Selection List** panel.

Field	Description
Line Command	S Select a library type. D Deselect a library type.
Lib Type	Displays the library type, which is defined in Global Administration for the base ChangeMan ZMF product.
Request	Displays the action requested by the line command you entered.
Description	Displays the library type description from the **Global Library Types Part 1 of 2** panel in Global Administration.

These rules and conditions apply when you select library types for an associated approver.

- When you first display the **GLBL Library Selection List** panel for an associated approver, all library types from Global Administration are displayed.

- If you select a library type and exit the **GLBL Library Selection List** panel, the next time you display the panel for this approver, previously selected library types are not shown.

- You are not required to select a library type for an associated approver. Other conditions for an associated approver can be selected from the next panel.

6 After you type your entries on the **GLBL Library Selection List** panel, press **Enter** to process your requests and show them in the **Request** column.

```
CMNRMLAL               GLBL Library Selection List          Row 11 to 41 of 41
Command ===> _____      Scroll ===> CSR

    Type Request   Description
_   JCL  *Select*  Execution JCL
_   JCT            Java JAR Build Control
_   JVL            HFS - JAVA executable class
_   JVS            HFS - JAVA source type
_   JVT            HFS - text type
_   LCT            Linkedit Control Cards
_   LDB            Db2 Program Load
_   LOD            Executable Load Modules
_   LOS            Load for Subprograms to be LinkedNCAL
_   LSH            HFS Listings
_   LST            Compressed Stage listings
_   NCL            NCAL subroutine load library
_   OBJ            Object module library
_   PKG            Db2 Bind Package Commands
_   PRC  *Select*  Cataloged Procedures
_   SDB            Db2 Program Source
_   SPD            Db2 Stored Proc Definitions - Non-SQL
...
_   TST            Test Library type
_   UDF            Db2 User-Defined Function Definitions
_   WAR            Java Web Archives
_   WCT            Java WAR Build Control
_   ZCP            Shared Baseline Components
_   ZLS            Shared Baseline Subprogram Load (NCAL)
_   ZSS            Shared Baseline Subprogram Source
****************************** Bottom of data ******************************
```

7 When you are satisfied with your library type selections on the **GLBL - Library Selection List** panel, press **PF3**. The *approver* **- Associated Approvers Part 1 of 1** panel (CMNRMAP2) is displayed.

```
CMNRMAP2           OPS - Associated Approvers Part 1 of 1      Row 1 to 2 of 2
Command ===> _____      Scroll ===> CSR

Application . . . ____          Remote site . . . _____
Release name  . . _____      Release area  . . _____

    Associated Library Types
_   JCL
_   PRC
****************************** Bottom of data ******************************
```

This panel shows the library types that are now associated with the approver. You can adjust those library types, or you can add other conditions to the associated approver.

This table describes the fields on the *approver* **- Associated Approvers Part 1 of 1** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an associated library type.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *libtype* Locate a library type. (Abbreviation: L)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command on a library type row to change the list of library types.
	D Delete the library type
	* Display the **GLBL - Library Selection List** panel to select more library types.
Application	Type an application mnemonic. If a package from this application is attached to a release, this approver is automatically added to release or area approvers.
Remote Site	Type a remote site. If a package containing installation instructions for this remote site is attached to a release, this approver is automatically added to release or area approvers.
Release Name	Type a release name. If a release is created with this name, this approver is automatically added to release or area approvers.
Release Area	Type a release area name. If an area with this name is created in a release, this approver is automatically added to release or area approvers.

These rules and conditions apply when you set conditions for an associated approver.

- All conditions specified in **Application**, **Remote Site**, **Release**, **Release Area**, and any one value in **Associated Library Types** must be present for the associated approver to be added to the area or release. That is, the conditions you specify in these fields are treated as *logical and*. (Blank is the same as "all.")

- If you specify multiple **Associated Library Types**, only one of those library types must be present for the associated approver to be added to the area or release. That is, multiple library types are treated as *logical or*.

> **IMPORTANT!** For the purpose of associated approvers, a library type is "added" to a release when a package containing that library type is checked in to a release starting area. Thus, an associated check-in approver that specifies a library type condition may not be added to a starting area because that library type is not yet "present." Rather than using an associated check-in approver for library types in starting areas, you may want to define a global check-in approver and add it to starting areas when you define the release.

On the *approver - Associated Approvers Part 1 of 1* panel, press **PF3**. You are returned to the **Global Release Management Approver List** panel, where the newly created approver is displayed.

```
CMNRMAPL                        Global Approver List      Global Approver Created
Command ===> _____       Scroll ===> CSR

   Security    Order
   entity      no.      Description
__ ACCTPAY     0010     Accounts Payable Approver Manager
__ ACTPLEAD    0010     Lead Developer ACTP Application
__ CIO         0010     Chief Information Officer
__ FINACCTG    0010     Financial Accounting Manager
__ GENLEDGR    0010     General Ledger Manager
__ OPS         0020     Data Center Operations
****************************** Bottom of data ******************************

...
     +----------------------------------------------------------------+
     | CMR6029A - Global Approver OPS has been successfully created. |
     +----------------------------------------------------------------+
```

Deleting or Querying a Global Approver

Follow these steps to delete or query approvers in the global approver list:

1   On the **Release Global Administration Options** panel, choose option **2 Approvals** and press **Enter**.

Or, from anywhere in ChangeMan ZMF, type **=A.R.G.2** and press **Enter**.

The **Global Approver List** panel CMNRMAPL is displayed.

```
CMNRMAPL                        Global Approver List         Row 1 to 14 of 14
Command ===> _____       Scroll ===> CSR

   Security    Order
   entity      no.      Description
__ ACCTPAY     0010     Accounts Payable Approver Manager
__ ACTPLEAD    0010     Lead Developer ACTP Application
__ DBA         0010     Database Administrator
__ GENLEDGR    0010     General Ledger Manager
__ GENLLEAD    0010     GENL Application Lead Programmer
__ INTCOORD    0010     Integration Test Coordinator
__ QATCOORD    0010     Quality Assurance Test Coordinator
__ UATCOORD    0010     User Acceptance Test Coordinator
__ UTCOORD     0010     Unit Test Coordinator
__ OPS         0020     Data Center Operations
__ CIO         0030     Chief Information Officer
__ FINACCTG    0030     Financial Accounting Manager
__ RLSEMNGR    0030     Release Manager
__ SYSDVMGR    0030     Systems Development Manager
****************************** Bottom of data ******************************
```

This table describes the fields on the **Global Release Management Approver List** panel.

Field	Description
Command	Type CREATE xxxxxxxx to create a new global approver. See "Creating a Global Approver" on page 66. Leave Command blank to type a line command on an Approver.
Line Command	QA Query Approver - Display the global approvers and notifications. UA Update Approver - Update global approvers and notifications. Update library types for associated approvers. DA Delete Approver - Delete the approver from the global approver list. AA Query Associations - Display associated library types for an associated approver.
Security Entity	Displays the global approver security entity.
Order Number	Displays the notification order number defined in global approvers.
Approver Description	Displays the approver description entered in global approvers.

Type a line command on an approver row to query, update, or delete a global approver, or query associated library types. Press **Enter** to process.

Updating a Global Approver

Follow these steps to update approvers in the global approver list:

1 On the **Release Global Administration Options** panel, choose option **2 Approvals** and press **Enter**.

Or, from anywhere in ChangeMan ZMF, type **=A.R.G.2** and press **Enter**.

The **Global Approver List** panel CMNRMAPL is displayed.

```
CMNRMAPL                     Global Approver List          Row 1 to 14 of 14
Command ===> _____       Scroll ===> CSR

   Security   Order
   entity     no.     Description
__ ACCTPAY    0010    Accounts Payable Approver Manager
__ ACTPLEAD   0010    Lead Developer ACTP Application
__ DBA        0010    Database Administrator
__ GENLEDGR   0010    General Ledger Manager
__ GENLLEAD   0010    GENL Application Lead Programmer
__ INTCOORD   0010    Integration Test Coordinator
__ QATCOORD   0010    Quality Assurance Test Coordinator
__ UATCOORD   0010    User Acceptance Test Coordinator
__ UTCOORD    0010    Unit Test Coordinator
__ OPS        0020    Data Center Operations
__ CIO        0030    Chief Information Officer
__ FINACCTG   0030    Financial Accounting Manager
__ RLSEMNGR   0030    Release Manager
__ SYSDVMGR   0030    Systems Development Manager
****************************** Bottom of data ******************************
```

This table describes the fields on the **Global Release Management Approver List** panel.

Field	Description
Command	Type CREATE xxxxxxxx to create a new global approver. See "Creating a Global Approver" on page 66. Leave Command blank to type a line command on an Approver.
Line Command	QA Query Approver - Display the global approvers and notifications. UA Update Approver - Update global approvers and notifications. Update library types for associated approvers. DA Delete Approver - Delete the approver from the global approver list. AA Query Associations - Display associated library types for an associated approver.
Security Entity	Displays the global approver security entity.
Order Number	Displays the notification order number defined in global approvers.
Approver Description	Displays the approver description entered in global approvers.

2 Type line command **UA** on an approver row on the **Global Approver List** panel. The *approver* **Global Approvers - Part 1 of 2** panel (CMNRMAP0) is displayed.

```
CMNRMAP0              DBA Global Approvers - Part 1 of 2
Command ===> _____

Description . . . . . . . Database Administrator_____

Order number  . . . . . . 0010

Enter "/" to select option
  _ Install Approver
  _ Check-in Approver
  / Check-off Approver
  / Associated Approver

Approver List Count . . . . 0001
```

This table describes the fields on the *approver* **Global Approvers - Part 1 of 2** panel.

Field	Description
Description	Type a description for the approver. This field is case sensitive.
Order number	Type a 4-digit number to set a hierarchical order of approver notifications. Example: Approver order number 0001 is notified of a pending approval, enters their approval, then approver order number 0002 is notified of a pending approval. The approver order number can be changed after an approver is copied from the Global Approver List into a release. Values: 0001-9999 Sets a hierarchical approval notification order. 0000 Approver will not be notified and approval can be entered anytime.

Field	Description
Install Approver	Select to make this an install approver. When this approver is added to a release, approval is required to install the release. See "Approver Entities" on page 45.
Check-in Approver	Select to make this a check-in approver. When this approver is added to a release area, approval is required before check-in to the area is permitted. See "Approver Entities" on page 45.
Check-off Approver	Select to make this a check-off approver. When this approver is added to a release area, approval is required before the release life cycle can proceed beyond this area. See "Approver Entities" on page 45.
Associated Approver	Select to make this an associated approver. When this approver is added to a release, if the library type associated with this approver is also added to the release, approval is required to install the release.
Approver List Count	Displays the number of approver notifications that have been entered on the *approver* **Global Approvers - Part 2 of 2** panel, which is the next panel in this series.

Overtype existing information on the *approver* **Global Approvers - Part 1 of 2** panel to change the information. These rules and conditions apply when you update global approvers.

- You can select multiple approver types, such as Install, Check-in, Check-off, and Associate for the same global approver. However, when a global approver is selected for an area, they cannot be both a Check-in and Check-off approver.

- The indicator for Associated Approver must be combined with one of the other approver types: Install, Check-in, or Check-off.

- All approver information defined in the global approver list can be updated when an approver is added to a release or area.

- Information you enter on approver definition panels is stored in your ISPF profile and displayed the next time the panel is displayed to define the a new approver.

3 On the *approver* **Global Approvers - Part 1 of 2** panel, Press **Enter** to process your changes. The *approver* **Global Approvers - Part 2 of 2** panel (CMNRMAP1) is displayed.

```
CMNRMAP1              OPS Global Approvers - Part 2 of 2        Row 1 to 2 of 2
COMMAND ===> _____ SCROLL ===> CSR

Approver: Data Center Operations
Order No: 0020


    Vehicle   User(s) to notify
_   MVSSEND   user015_____
_   MVSSEND   user239_____
***************************** Bottom of data *****************************
```

This table defines the fields on the *approver* **Global Approvers - Part 2 of 2** panel.

Field	Description
Line Command	I Insert a new notification.
	R Repeat an existing notification.
	D Delete an existing notification.

Field	Description
Vehicle	Type a Notification Vehicle that is enabled in Global Administration Parameters. (MVSSEND is not explicitly enabled in Global Administration Parameters, but it is always available.)
User(s) to Notify	Type one or more userids or e-mail addresses that are appropriate for the Notification Vehicle. This field is case sensitive.

Overtype information on the *approver* **Global Approvers - Part 2 of 2** panel to update the information. Insert and delete approver notification rows as needed.

These rules and conditions apply when you update notifications for a global approver.

- You are not required to define notifications for an approver.

- You can type multiple userids or e-mail addresses in the **User(s) to Notify** field.

- Use a delimiter that is appropriate for the notification vehicle to separate multiple userids or e-mail addresses. Use space as a delimiter for MVSSEND.

- If you cannot fit all userids or e-mail addresses for a notification vehicle on one row, create multiple rows with the same notification vehicle.

4 After you type your entries on the *approver* **Global Approvers - Part 2 of 2** panel, press **PF3**.

If you did *not* set the **Associated Approver** indicator to **Y** on the *approver* **Global Approvers - Part 1 of 2** panel, you are returned to the **Global Approver List** panel, where the updated approver is displayed.

```
CMNRMAPL                     Global Approver List    Global Approver Updated
Command ===> _____ Scroll ===> CSR

   Security   Order
   entity     no.    Description
__ ACCTPAY    0010    Accounts Payable Approver Manager
__ ACTPLEAD   0010    Lead Developer ACTP Application
__ DBA        0010    Database Administrator
__ GENLEDGR   0010    General Ledger Manager
__ GENLLEAD   0010    GENL Application Lead Programmer
__ INTCOORD   0010    Integration Test Coordinator
__ QATCOORD   0010    Quality Assurance Test Coordinator
__ UATCOORD   0010    User Acceptance Test Coordinator
__ UTCOORD    0010    Unit Test Coordinator
__ OPS        0020    Data Center Operations
__ CIO        0030    Chief Information Officer
__ FINACCTG   0030    Financial Accounting Manager
__ RLSEMNGR   0030    Release Manager
__ SYSDVMGR   0030    Systems Development Manager
****************************** Bottom of data ******************************
   ...
      +---------------------------------------------------------------+
      | CMR6028A - Global Approver DBA has been successfully updated. |
      +---------------------------------------------------------------+
```

If you *did* select the **Associated Approver** indicator on the *approver* **Global Approvers - Part 1 of 2** panel, the **GLBL - Library Selection List** panel (CMNRMAP2) is displayed.

```
CMNRMAP2            DBA - Associated Approvers Part 1 of 1      Row 1 to 1 of 1
Command ===> _____     Scroll ===> CSR

Application . . . ____              Remote site . . . _____
Release name  . . _____          Release area  . . _____

     Associated Library Types
_    DBB
***************************** Bottom of data *****************************
```

Use this panel to select the library types that are associated with this approver.

To delete a library type, type **D** in the line command.

To add a library type, type ***** in the line command of an existing library type. The **GLBL - Library Selection List** panel is displayed..

```
CMNRMLAL                GLBL Library Selection List           Row 1 to 38 of 41
Command ===> _____     Scroll ===> CSR

   Type Request   Description
_  CLS            CLIST
_  CPY            Copybooks
_  CP2            Copybooks for Utilities
_  CTC            Control Statements
s  DBB            Db2 BIND PLAN Commands
s  DBR            Db2 DBRM
_  DOC            Documentation
_  HTH            HFS resident HTML
_  JAR            Java Archives
_  JCF            Java Class files
_  JCL            Execution JCL
...
_  TST            Test Library type
_  UDF            Db2 User-Defined Function Definitions
_  WAR            Java Web Archives
_  WCT            Java WAR Build Control
```

This table describes the fields on the **GLBL - Library Selection List** panel.

Field	Description
Line Command	S Select a library type. D Deselect a library type.
Lib Type	Displays the library type, which is defined in Global Administration for the base ChangeMan ZMF product.
Request	Displays the action requested by the line command you entered.
Description	Displays the library type description from the **Global Library Types Part 1 of 2** panel in Global Administration.

These rules and conditions apply when you select library types for an associated approver.

- Library types already associated with the global approver and displayed on the *approver* **- Associated Approvers Part 1 or 1** panel are not displayed on the **GLBL - Library Selection List** panel.

5 After you type your entries on the **GLBL Library Selection List** panel, press **Enter** to process your requests and show them in the **Request** column.

```
CMNRMLAL                GLBL Library Selection List          Row 1 to 38 of 41
Command ===> _____      Scroll ===> CSR

    Type Request    Description
_   CLS             CLIST
_   CPY             Copybooks
_   CP2             Copybooks for Utilities
_   CTC             Control Statements
_   DBB  *Select*   Db2 BIND PLAN Commands
_   DBR  *Select*   Db2 DBRM
_   DOC             Documentation
_   HTH             HFS resident HTML
_   JAR             Java Archives
_   JCF             Java Class files
_   JCL             Execution JCL
...
_   TST             Test Library type
_   UDF             Db2 User-Defined Function Definitions
_   WAR             Java Web Archives
_   WCT             Java WAR Build Control
```

6 When you are satisfied with your library type selections on the **GLBL Library Selection List** panel, press **PF3 (your must first press Enter to show *Select* for the desired selected items)**. The updated *approver* **- Associated Approvers Part 1 of 1** panel is then displayed.

```
CMNRMAP2            DBA - Associated Approvers Part 1 of 1      Row 1 to 2 of 2
Command ===> _____      Scroll ===> CSR

Application . . . ____            Remote site . . . _____
Release name  . . _____        Release area  . . _____

    Associated Library Types
_   DBB
_   DBR
****************************** Bottom of data ******************************
```

This panel shows the library types that are now associated with the approver.

On the ***approver* - Associated Approvers Part 1 of 1** panel, press **PF3**. You are returned to the **Global Approver List** panel, where the updated approver is displayed.

```
CMNRMAPL                       Global Approver List     Global Approver Updated
Command ===> _____    Scroll ===> CSR

   Security    Order
   entity      no.      Description
__ ACCTPAY     0010     Accounts Payable Approver Manager
__ ACTPLEAD    0010     Lead Developer ACTP Application
__ DBA         0010     Database Administrator
__ GENLEDGR    0010     General Ledger Manager
__ GENLLEAD    0010     GENL Application Lead Programmer
__ INTCOORD    0010     Integration Test Coordinator
__ QATCOORD    0010     Quality Assurance Test Coordinator
__ UATCOORD    0010     User Acceptance Test Coordinator
__ UTCOORD     0010     Unit Test Coordinator
__ OPS         0020     Data Center Operations
__ CIO         0030     Chief Information Officer
__ FINACCTG    0030     Financial Accounting Manager
__ RLSEMNGR    0030     Release Manager
__ SYSDVMGR    0030     Systems Development Manager
****************************** Bottom of data ******************************
...
      +----------------------------------------------------------------+
      | CMR6028A - Global Approver DBA has been successfully updated. |
      +----------------------------------------------------------------+
```

Chapter 6

Configuring Releases, Areas, and Applications

This chapter tells you how to create a release, add areas to the release, join applications to the release, configure SYSLIB definitions, associate related applications and prior releases, and add approvers to the areas and to the release itself.

Creating a Release

This section tells you how to create a release, create release areas, join applications, configure application library types and SYSLIBs, and associate prior releases.

The first time you create a release in ChangeMan ZMF ERO, you must execute all of the steps in this section. After you have built one or more releases, you can copy the structure of an existing release to create a new release. See "Copying a Release" on page 149.

The functions required to create a release are protected by security entities defined in your security system.   Your TSO ID must be associated with the security entity for release managers or the security entity for ChangeMan ZMF application administration to perform the actions described in this section.

Release managers or ChangeMan ZMF global administrators execute these ERO functions to create a release:

- Create a release

- Add Install Approvers

- Create Release Areas

- Add Area Approvers

Release application administrators or ChangeMan ZMF application administrators execute these ERO functions to continue release configuration:

- Join Application to a Release

- Define Application Library Types

- Define SYSLIB Concatenations

Then release administrators or global administrators complete the release configuration with these functions:

- Associate prior releases

- Define area promotion

For more information about the security entities that protect ChangeMan ZMF ERO functions, see "Defining Security Entities" on page 44.

Create a Release

Follow these steps to create a release.

1 Access the **Release List** in release configuration through the following menu path.

    a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

    c Type **R** on the **Option** line of the **Release Management Configuration Options** panel, and press **Enter**.

> **d** Type release selection criteria in fields on the **Release Selection Parameters** panel (CMNRMRSC), or leave the fields blank. Press **Enter**, and the **Release List** panel is displayed..

```
CMNRMRLS                        Release List                   Row 1 to 5 of 5
Command ===> _____  Scroll ===> CSR

   Release   Sta  Install  Work request      Dept      Aud  Creator  Created
__ FIN6410   DEV  20160328  WR 9010           FINANCE        USER015  20151126
__ FIN6420   DEV  20160328  WR 9020           FINANCE        USER015  20151126
__ FIN6430   DEV  20160328  WR 9030           FINANCE        USER015  20151126
__ FIN6440   DEV  20160429  WR 9030           FINANCE        USER015  20160111
__ FIN6450   DEV  20160527  WR 9050           FINANCE        USER015  20160113
****************************** Bottom of data ******************************
```

> The **Release List** panel shows the releases that satisfy the selection criteria you typed on the **Release List Parameters** panel, or it shows all releases if you did not enter any selection criteria.
>
> The Release List is empty until you define your first release.

2 On the **Command** line of the **Release List** panel, type a **CREATE** command in the format:

CREATE xxxxxxxx

where *xxxxxxxx* is a unique 1-8 character release identifier. Since the release identifier is used as a node in dataset names for release area libraries, the release identifier must comply with rules for DSN node names.

This example shows the **CREATE** command on the **Release List** panel.

```
CMNRMRLS                        Release List                   Row 1 to 5 of 5
Command ===> create fin6460_____  Scroll ===> CSR

   Release   Sta  Install  Work request      Dept      Aud  Creator  Created
__ FIN6410   DEV  20160328  WR 9010           FINANCE        USER015  20151126
__ FIN6420   DEV  20160328  WR 9020           FINANCE        USER015  20151126
__ FIN6430   DEV  20160328  WR 9030           FINANCE        USER015  20151126
__ FIN6440   DEV  20160429  WR 9030           FINANCE        USER015  20160111
__ FIN6450   DEV  20160527  WR 9050           FINANCE        USER015  20160113
****************************** Bottom of data ******************************
```

3 When you have typed the create command, press **Enter**. The *release* **Release Management Parameters - Part 1 of 2** panel is displayed.

```
CMNRMRC0     FIN6460 Release Management Parameters - Part 1 of 2
Command ===> _____

Release description . . . . . FIN6450 Release for test_____
Creator . . . . . . . . . . USER123_____
Creator's Phone Number  . . . 11292_____
Work request  . . . . . . . . WR 9015_____
Department  . . . . . . . . . FINANCE_
Minimum audit level . . . . . 0      (0,1,2,3,4,5)
Minimum approval rule . . . . 0      (0,1,2,3)
Minimum blocking rule . . . . 0      (0,1,2,3,4,5,6,7)
Minimum Check-in rule . . . . 0      (0,1,2,3,4,5,6,7)
Minimum retrieve rule . . . . 0      (0,1,2,3)
SYSLIB concatenation order  . A      (A-Ascending,D-Descending)
Default IHA audit setting . . N      (Y/N/C)
Enter "/" to select option
  / Enforce IHA default setting
  _ Bypass checkin package requirements
  _ Allow empty packages to process in release
  _ Auto cleanup of packages in DEV status
  _ Auto cleanup of packages in FRZ status
  _ Auto cleanup of packages in APR status
```

When you create a release, this panel initially displays information stored in your ISPF profile from the last time you entered Information on the panel.

This table describes the fields on the *release* **Release Management Parameters - Part 1 of 2** panel.

Field	Description
Release description	Type a description of the release. This field is case sensitive and has a maximum length of 50 characters.
Creator	Type a release creator name. This field is not case sensitive and has a maximum length of 25 characters.
Creator's Phone Number	Type a telephone number for the release creator. This field is not case sensitive and has a maximum length of 15 characters.
Work request	Type a work request number. This field is not case sensitive and has a maximum length of 16 characters.
Department	Type a department code. This field is not case sensitive and has a maximum length of 8 characters.

Field	Description
Minimum audit level	Type the least restrictive audit rule that may be used for areas in this release. You can specify more restrictive audit rules for areas in this release, but you cannot specify less restrictive rules. The audit rule sets the minimum release audit return code that is required before an area may be blocked.

Rule	Max RC	Description
0	Any	Release audit is optional. Release audit process failure is allowed.
1	Less than 20	Release audit is required. Audit must complete processing successfully. Any out-of-sync conditions are allowed.
2	12	Release audit is required. Out-of-sync conditions with respect to components within the audited area are allowed. Out-of-sync conditions with respect to components outside the audited area in other areas in the chain of next areas, in final areas for prior releases, and in baselines are allowed.
3	8	Release audit is required. Out-of-sync conditions with respect to components outside the audited area in other areas in the chain of next areas, in final areas for prior releases, and in baselines are allowed.
4	4	Release audit is required. Warning messages allowed, usually for component in area not different from baseline.
5	0	Release audit is required. No out-of-sync errors and no warning messages allowed.

Field	Description
Minimum approval rule	Type the least restrictive approval rule that may be used for areas in this release. You can specify more restrictive approval rules for areas in this release, but you cannot specify less restrictive rules. The approval rule sets requirements for approvals before check-in and check-off.

0	No requirements.
1	This area must be approved for check-in before a package or an area can be checked in to this area.
2	This area must be approved for check-off before this area can be checked in to the next area.
3	Rules 1 and 2.

Field	Description
Minimum blocking rule	Type the least restrictive blocking rule that may be used for areas in this release. You can specify more restrictive blocking rules for areas in this release, but you cannot specify less restrictive rules. The blocking rule sets restrictions on blocking a release area.

0	No restrictions are imposed by this rule.
1	This area must be audited before it can be blocked.
2	The person blocking this area must be permitted to the blocking security entity specified in this area.
3	Rules 1 and 2.

Field	Description
Minimum Check-in rule	Type the least restrictive check-in rule that may be used for areas in this release. You can specify more restrictive check-in rules for areas in this release, but you cannot specify less restrictive rules. The check-in rule sets restrictions on check-in. 0 No restrictions are imposed by this rule. 1 This area must be audited before it can be checked in to the next area. 2 This area must be blocked before it can be checked in to the next area. 3 The person checking-in a package or area *into* this area must be permitted to the check-in security entity specified in this area. 4 Rules 1 and 2. 5 Rules 1 and 3. 6 Rules 2 and 3. 7 Rules 1, 2, and 3.
Minimum retrieve rule	Type the least restrictive retrieve rule that may be used for areas in this release. You can specify more restrictive retrieve rules for areas in this release, but you cannot specify less restrictive rules. The retrieve rule sets conditions required to retrieve components, packages, or areas from release areas. 0 No restrictions are imposed by this rule. 1 This area must be unblocked to retrieve from the area. 2 The person executing a retrieve from this area must be permitted to the retrieve security entity specified in this area. 3 Rules 1 and 2.
SYSLIB concatenation order	Type a code that determines the concatenation sequence of area libraries in SYSLIB DD statements for build process JCL. A Ascending - Area libraries are concatenated with the target area on the top, followed by libraries in the ascending area chain between the target area and the final area, with final area libraries at the bottom. This ensures that the latest changes checked in to areas starting from the target area to the final area are used instead of earlier changes that are resident in the final area. D Descending - Area libraries are concatenated with the final area on top, followed by libraries in the descending area chain between the final area and the target area, with the target area libraries at the bottom. This ensures that the earliest changes checked in to areas starting from the final area to the target area are used instead of later changes.

Field	Description
Default IHA audit setting	Type the default code that is first displayed in the **Ignore Higher Areas** field on the **Release Area Audit Panel**. When area audit is run for non-final areas, the I**gnore Higher Areas** field determines whether higher areas in the same release are included. N Area audit includes higher areas in the same release. The area audit return code is updated. Y Area audit ignores higher areas in the same release. Areas in prior releases are processed normally. The area audit return code is not updated; audits run with this setting are for information only. C The behavior of area audit is determined by the structure of the current release. - If the current release has only one starting area, then area audit runs as if the **Ignore Higher Areas** field is set to Y. - If there are multiple starting areas, area audit runs as if the **Ignore Higher Areas** field is set to N.
Enforce IHA default setting	Type a setting that determines whether the default defined in **Default IHA audit setting** above can be changed on the **Release Area Audit Panel**. Select this to prohibit changes to the I**gnore Higher Areas** field on the **Release Area Audit Panel**. The value will always be the default defined here in the **Default IHA audit setting** field. Leave blank to allow changes to the **Ignore Higher Areas** field on the **Release Area Audit Panel**.
Bypass checkin package requirements	By default, when checking into the first area in a release the checkin rules are applied to the associated package. For example, area checkin rule 2 requires that the package be frozen if this is the first area in the release life cycle. Selecting this option will bypass any package requirements associated with the checkin request. So, in the previous example, selecting this option will mean that the package will not need to be frozen if area check-in rule 2 is selected.
Allow empty packages to process in release	By default, empty packages are not allowed to be processed in a release. If this is selected then empty packages are allowed for the release. This includes baselining the empty package. Seleting this option will allow the test area and test release functions to complete sucessfully for packages containing no components regardless of any area bypass settings.
Auto cleanup of packages	Specify whether you want Test Release (or Test Area for the final area) to remove components from attached packages if the components are not found in the final area. If an attached package is empty, it is automatically reverted and detached from the release. in DEV status Select to automatically remove components from attached packages that are in DEV status. in FRZ status Select to automatically remove components from attached packages that are in FRZ status. in APR status Select to automatically remove components from attached packages that are in APR status. If no package status is selected, automatic cleanup is effectively disabled.

This example shows the completed *release* **Release Management Parameters - Part 1 of 2** panel CMNRMRC0.

```
CMNRMRC0      FIN6410 Release Management Parameters - Part 1 of 2
Command ===>

Release description . . . . . FIN6450 Release for May
Creator . . . . . . . . . . USER123
Creator's Phone Number  . . . 11292
Work request  . . . . . . . . WR 9050
Department  . . . . . . . . . FINANCE
Minimum audit level . . . . . 0      (0,1,2,3,4,5)
Minimum approval rule . . . . 0      (0,1,2,3)
Minimum blocking rule . . . . 0      (0,1,2,3,4,5,6,7)
Minimum Check-in rule . . . . 0      (0,1,2,3,4,5,6,7)
Minimum retrieve rule . . . . 0      (0,1,2,3)
SYSLIB concatenation order  . A      (A-Ascending,D-Descending)
Default IHA audit setting . . N      (Y/N/C)
Enter "/" to select option
  / Enforce IHA default setting
  _ Bypass checkin package requirements
  _ Allow empty packages to process in release
  _ auto cleanup of packages in DEV status
  _ Auto cleanup of packages in FRZ status
  _ Auto cleanup of packages in APR status
```

4 After you type your entries on the *release* **Release Management Parameters - Part 1 of 2** panel, press **Enter** to process those entries. The *release* **Release Management Parameters - Part 2 of 2** panel CMNRMRC1 is displayed.

```
CMNRMRC1      FIN6410 Release Management Parameters - Part 2 of 2
Command ===>

Install Date: from . . . 20160520 000001  to . . . 20160531 235900
Default scheduler  . . . MANUAL    (CMN, Manual or Other)
Contingency  . . . . . . 1         (1,2,3)

Enter "/" to select option
  / Add Associated Install Approvers
  / CMN scheduler
  / Manual scheduler
  / Other scheduler

Release Implementation Instructions:
```

When you create a release, this panel initially displays information stored in your ISPF profile from the last time you entered information on the panel.

This table describes the fields on the *release* **Release Management Parameters - Part 2 of 2** panel.

Field	Description
Install Date From	Type the low end of a range for release install date/times. Install date/times for release packages and applications cannot be earlier than this entry. The **Install From DT/TM** also establishes a logical ordering of prior releases that determines the concatenation of area libraries in build processing SYSLIB statements and in audit processing.
To	Type the high end of a range for release install date/times. Install date/times for release packages and applications cannot be later than this entry.
Default scheduler	Type an install scheduler allowed in the Scheduler fields above.
Contingency	Type a code for the action to be taken if the install process fails. This code provides information only. The code has no effect on ChangeMan ZMF processing.
Option	Add Associated Install Approvers - select to automatically add associated install approvers when the release is blocked.
	The next three fields determine the installation scheduler allowed in packages attached to this release. You cannot permit a scheduler here that is prohibited in global administration for the base ChangeMan ZMF system. CMN — Select to allow attached packages to use the ChangeMan ZMF internal scheduler, which initiates package installation when the internal scheduler determines that the package (Site) Install Date and From Time have arrived. Manual — Select to allow attached packages to use the Manual scheduler, which initiates the package installation process when the last release approval is entered. Other — Select to allow attached packages to be installed by a third party automated job scheduler.
Release Implementation Instructions	Type up to 10 lines of free-form release installation instructions. The 10 lines are case sensitive.

This example shows the completed *release* **Release Management Parameters -
Part 2 of 2** panel.

```
CMNRMRC1     FIN6460 Release Management Parameters - Part 2 of 2
Command ===> _____

Install Date: from . . . 20160520 000001  to . . . 20160531 235900
Default scheduler  . . . MANUAL   (CMN, Manual or Other)
Contingency  . . . . . . 1        (1,2,3)

Enter "/" to select option
  / Add Associated Install Approvers
  / CMN scheduler
  / Manual scheduler
  / Other scheduler

Release Implementation Instructions:
   All packages attached to this release will be installed between
   May 20 and May 31. If there are problems with
   any part of this release, call the Release Manager.
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
```

5   After you type your entries on the *release* **Release Management Parameters -
Part 2 of 2** panel, press **Enter** to process the create release command. You are
returned to the **Release List** panel, which now includes the release you just created.

```
CMNRMRLS                     Release List              Release Created
Command ===> _____    Scroll ===> CSR

   Release  Sta  Install  Work request    Dept      Aud  Creator  Created
__ FIN6410  DEV  20151218  WR 9010        FINANCE         USER015  20151126
__ FIN6420  DEV  20160328  WR 9020        FINANCE         USER015  20151126
__ FIN6430  DEV  20160328  WR 9030        FINANCE         USER015  20151126
__ FIN6440  DEV  20160429  WR 9030        FINANCE         USER015  20160111
__ FIN6450  DEV  20160527  WR 9050        FINANCE         USER015  20160113
__ FIN6460  DEV  20160520  WR 9050        FINANCE         USER015  20160405
****************************** Bottom of data ******************************
...
        +-----------------------------------------------------------+
        | CMR0521A - Release FIN6460 has been successfully created. |
        +-----------------------------------------------------------+
```

Add Install Approvers

Install approvers are defined in ERO Global Administration. See "Defining the Global
Approver List" on page 66.

Follow these steps to add install approvers to a release.

1   Access the **Release List** release configuration through the following menu path.

  a   Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then
      press **Enter.**

b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

c Type **R** on the **Option** line of the **Release Management Configuration Options** panel (CMNRADM), and press **Enter**.

d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel (CMNRMRLS) is displayed.

```
CMNRMRLS                        Release List                    Row 1 to 3 of 3
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Created
__ FIN6410  DEV  20151219  WR 9010          FINANCE        USER015  20151126
__ FIN6420  DEV  20160116  WR 9020          FINANCE        USER015  20151126
__ FIN6430  DEV  20160220  WR 9030          FINANCE        USER015  20151126
__ FIN6440  DEV  20160429  WR 9030          FINANCE        USER015  20160111
__ FIN6450  DEV  20160527  WR 9050          FINANCE        USER015  20160113
__ FIN6460  DEV  20160520  WR 9050          FINANCE        USER015  20160405
***************************** Bottom of data ******************************
```

The **Release List** panel shows the releases that satisfy the selection criteria you typed on the **Release List Parameters** panel. If you did not enter any selection criteria, the **Release List** panel shows all releases.

2 On the **Release List** panel, type line command **IA** on a release. The **Global Approver Selection List** panel is displayed.

```
CMNRMGAL              Global Approver Selection List      Row 1 to 12 of 12
Command ===> _____  Scroll ===> CSR

   Security           Order
   entity   Request   no.     Description
_  ACCTPAY            0010     Accounts Payable Approver Manager
_  ACTPLEAD           0010     Lead Developer ACTP Application
_  GENLEDGR           0010     General Ledger Manager
_  GENLLEAD           0010     GENL Application Lead Programmer
_  INTCOORD           0010     Integration Test Coordinator
_  QATCOORD           0010     Quality Assurance Test Coordinator
_  UATCOORD           0010     User Acceptance Test Coordinator
_  UTCOORD            0010     Unit Test Coordinator
_  CIO                0030     Chief Information Officer
_  FINACCTG           0030     Financial Accounting Manager
_  RLSEMNGR           0030     Release Manager
_  SYSDVMGR           0030     Systems Development Manager
***************************** Bottom of data ******************************
```

This table describes the fields, commands, and line commands on the **Global Approver Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an approver.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *approver* Locate an approver. (Abbreviation: L)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)

Field	Description
Line Command	Type a line command to build a list of install approvers to be added to the release. S Select an approver. D Deselect an approver that shows *Select* in the **Request** field.
Security entity	Displays the global approver security entity.
Request	Displays the requested action.
Order no.	Displays the notification order number defined in global approvers.
Description	Displays the approver description entered in global approvers.

Use line commands to select install approvers for the release.

3 When you have finished typing line commands on the **Global Approver Selection List** panel, press **Enter** to process the line commands. The **Global Approver Selection List** panel is returned with updated information in the **Request** column.

```
CMNRMGAL                  Global Approver Selection List      Row 1 to 12 of 12
Command ===> _____ Scroll ===> CSR

  Security          Order
  entity    Request no.      Description
_ ACCTPAY           0010     Accounts Payable Approver Manager
_ ACTPLEAD          0010     Lead Developer ACTP Application
_ GENLEDGR          0010     General Ledger Manager
_ GENLLEAD          0010     GENL Application Lead Programmer
_ INTCOORD          0010     Integration Test Coordinator
_ QATCOORD          0010     Quality Assurance Test Coordinator
_ UATCOORD          0010     User Acceptance Test Coordinator
_ UTCOORD           0010     Unit Test Coordinator
_ CIO               0030     Chief Information Officer
_ FINACCTG  *Select* 0030    Financial Accounting Manager
_ RLSEMNGR  *Select* 0030    Release Manager
_ SYSDVMGR  *Select* 0030    Systems Development Manager
****************************** Bottom of data ******************************
```

Type additional line commands to change the list of selected approvers, and press **Enter** to process the commands and present a new list.

4 When you are satisfied with the list of selected install approvers, press **PF3** to begin processing each approver on the list. The first panel displayed for each approver is the *release - approver* **Install Approvers - Part 1 of 2** panel.

```
CMNRMIA0       FIN6430 FINACCTG Install Approvers - Part 1 of 2
Command ===> _____

Description . . . . . . . . Financial Accounting Manager

Order number  . . . . . . . 0030

Enter "/" to select option
  / Install Approver

Approver List Count . . . . 0001
```

This table describes the fields on the *release - approver* **Install Approvers - Part 1 of 2** panel.

Field	Description
Description	Displays the approver definition defined in global approvers.
Order number	Type a 4-digit number to set a hierarchical order of approver notifications. Example: Approver order number 0001 is notified of a pending approval, enters their approval, then approver order number 0002 is notified of a pending approval.
	0001-9999 Sets a hierarchical approval notification order.
	0000 Approver will not be notified and approval can be entered anytime.
Install Approver	Displays the / install approval indicator defined in global approvers.
Approver List Count	Displays how many approver notification rows are defined on the notification definition panel.

You can only change the **Order Number** on this panel.

5   After you type your entries on the *release - approver* **Install Approvers - Part 1 of 2** panel, press **Enter** to process those entries. The *release - approver* **Install Approvers - Part 2 of 2** panel is displayed.

```
CMNRMIA1      FIN6430 - FINACCTG Install Approvers - Part 2 of Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

Approver: Financial Accounting Manager
Order No: 0030

    Vehicle   User(s) to notify
_   MVSSEND   USER015_____
****************************** Bottom of data ******************************
```

Use this panel to define notifications for the install approver.

This table defines the fields on the *release - approver* **Install Approvers - Part 2 of 2** panel.

Field	Description
Line Command	I Insert a new notification.
	R Repeat an existing notification.
	D Delete an existing notification.
Vehicle	Type a Notification Vehicle that is enabled in Global Administration Parameters. (MVSSEND is not explicitly enabled in Global Administration Parameters, but it is always available.)
User(s) to Notify	Type one or more userids or e-mail addresses that are appropriate for the Notification Vehicle. This field is case sensitive.

These rules and conditions apply when you define notifications for an install approver.

- You are not required to define notifications for an approver.

- You can type multiple userids or e-mail addresses in the **User(s) to notify** field.

- Use a delimiter that is appropriate for the notification vehicle to separate multiple userids or e-mail addresses. Use space as a delimiter for MVSSEND.

  - If you cannot fit all userids or e-mail addresses for a notification vehicle on one row, create multiple rows with the same notification vehicle.

6 After you type your entries on the *release - approver* **Install Approvers - Part 2 of 2** panel, press **PF3**.

If you selected more than one install approver from the global approver list, the *release - approver* **Install Approvers - Part 1 of 2** panel is displayed for the next selected approver. Cycle through this panel and the *release - approver* **Install Approvers - Part 2 of 2** panel for each install approver selected from the global approver list.

7 After the last selected install approver is processed, the *release* **Install Approver List** panel is displayed, showing the install approvers for the release.

```
CMNRMIAP                    FIN6430 Install Approver Lis Install Approver Updated
Command ===> _____ Scroll ===> CSR

   Security    Order
   entity      no.      Description
__ FINACCTG    0030     Financial Accounting Manager
__ RLSEMNGR    0030     Release Manager
__ SYSDVMGR    0030     Systems Development Manager
****************************** Bottom of data ******************************
...
   +--------------------------------------------------------------------+
   | CMR6031A - Install Approver SYSDVMGR has been successfully updated. |
   +--------------------------------------------------------------------+
```

NOTE A release install approver may be changed until install approver notifications are issued when the release is blocked.

Create Release Areas

Follow these steps to create an area in a release.

1 Access the **Release List** through the following menu path.

   a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

   c Type **R** on the **Option** line of the **Release Management Configuration Options** panel, and press **Enter**.

    d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel is displayed.

```
CMNRMRLS                       Release List                    Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install   Work request    Dept      Aud  Creator  Created
__ FIN6410  DEV  20151219  WR 9010         FINANCE        USER015  20151126
__ FIN6420  DEV  20160116  WR 9020         FINANCE        USER015  20151126
__ FIN6430  DEV  20160220  WR 9030         FINANCE        USER015  20151126
****************************** Bottom of data ******************************
```

    The **Release List** panel shows the releases that satisfy the selection criteria you typed on the **Release List Parameters** panel. If you did not enter any selection criteria, the **Release List** panel shows all releases.

2 On the **Release List** panel, type line command **AR** on a release. The *release* **Release Area Definitions** panel (CMNRMARL) is displayed.

```
CMNRMARL               FIN6420 Release Area Definitions
Command ===> _____ Scroll ===> CSR

   Area      Type     Step  Description
__ ACCTPAY   SUBSYS   0001  Starting area for Accounts Payable components
__ GENLEDGR  SUBSYS   0002  Starting area for General Ledger components
__ FINANCE   SYSTEM   0003  Final area for Finance components
****************************** Bottom of data ******************************
```

    This table describes the fields, commands, and line commands on the *release* **Release Area Definitions** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an area.
	CANCEL Cancel panel without update. (Abbreviation: CA)
	CREATE Create a release area. (Abbreviation: CR)
	LOCATE *area* Locate an area. (Abbreviation: LO)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type a line command on a Release.
	AA Area Approvers - Add, update, delete, or display area approvers.
	CL Reset/Query Area Component Locks - Delete or query area component-level locks
	DA Delete Area - Delete an existing release area.
	QA Query Area - Show release area configuration in display mode.
	RS Reset Area - Reset the area in-progress indicators.
	UA Update Area - Update release area configuration.
Area Name	Displays the area name.

Field	Description
Type	Displays the area type. SUBSYS Subsystem area SYSTEM System area
Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Description	Displays the area description.

3 On the **Command** line of the *release* **Release Area Definitions** panel, type a **CREATE** command in the format:

```
CREATE xxxxxxxx
```

...where *xxxxxxxx* is a unique 1-8 character area name. Since the area name is used as a node in dataset names for release area libraries, the area name must comply with rules for DSN node names.

This example shows the **CREATE** command on the *release* **Release Area Definitions** panel (CMNRMARL).

```
CMNRMARL                FIN6430 Release Area Definitions
Command ===> create acctrec                                    Scroll ===> CSR

    Area      Type      Step  Description
__  ACCTPAY   SUBSYS    0001  Starting area for Accounts Payable components
__  GENLEDGR  SUBSYS    0002  Starting area for General Ledger components
__  FINANCE   SYSTEM    0003  Final area for Finance components
****************************** Bottom of data ******************************
```

4 When you have typed the create command, press **Enter**. The *release area* **Area Parameters - Part 1 of 2** panel is displayed.

```
CMNRMAC0          FIN6430 ACCTPAY Area Parameters - Part 1 of 2
Command ===>

Area description . .
Area step number . . . . . . . . . .  ____
Area step type . . . . . . . . . . .  _          (Subsystem-0 or System-1)
Any prior area name  . . . . . . . .  _____
The next area name . . . . . . . . .  _____
Area audit level . . . . . . . . . .  0          (0,1,2,3,4,5)
Area approval rule . . . . . . . . .  0          (0,1,2,3)
Area blocking rule . . . . . . . . .  0          (0,1,2,3,4,5,6,7)
Blocking entity  . . . . . . . . . .  _____   (Entity Name)
Area check-in rule . . . . . . . . .  0          (0,1,2,3,4,5,6,7)
Check-in Entity  . . . . . . . . . .  _____   (Entity Name)
Area retrieve rule . . . . . . . . .  0          (0,1,2,3)
Retrieve entity  . . . . . . . . . .  _____   (Entity Name)


Enter "/" to select option
  /  Allow component checkout
  /  Add associated approvers
  _  Exclude area from SYSLIB
  _  Override overlaid components
```

When you create an area, the minimum rule settings you defined for the release are displayed. Indicators on the panel display default values described in the table below.

The rest of the information on the *release area* **Area Parameters - Part 1 of 2** panel is stored in your ISPF profile and displayed when you create the next area for the release.

This table describes the fields on the *release area* **Area Parameters - Part 1 of 1** panel.

Field	Description
Area description	Type a description of the area. This field is case sensitive and has a maximum length of 56 characters.
Area step number	Type a step number for this area. The number in this field determines the order that areas are displayed on ERO panels. Check-in sequence and SYSLIB concatenation order in this release are determined by **Prior Area** and **Next Area** described below. However, area step number is used to establish the concatenation sequence for prior release area libraries that are included in builds for this release.
Area step type	Type a code to define the area type. 0 Subsystem area - Subsystem areas can be subordinate to other subsystem areas and to system areas in a tree structure or single thread structure of release areas. Packages are checked in to starting areas, which must be subsystem areas. 1 System area - System areas can only be subordinate to other system areas in a single thread. The final release area is a system area.
Any prior area name	Type the name of an area that is immediately subordinate to this area. If this area has more than one subordinate subsystem areas, type the name of any one of those subsystem areas. Starting subsystems where packages are checked in to a release have no prior areas.
The next area name	Type the name of the target area where you check-in this area. Subsystem areas always have a next area. System areas always have one next area except for the final area, which does not have a next area.

Field	Description
Area audit level	Type an audit rule for this release area. The audit rule sets the minimum release audit return code that is required before an area may be blocked. The audit rules that are valid for this area are limited by the minimum audit rule specified at the release level. You can specify a more restrictive rule at the area level than the minimum rule specified at the release level, but you cannot specify a less restrictive rule.

Rule	Max RC	Description
0	Any	Release audit is optional. Release audit process failure is allowed.
1	Less than 20	Release audit is required. Audit must complete processing successfully. Any out-of-sync conditions are allowed.
2	12	Release audit is required. Out-of-sync conditions with respect to components within the audited area are allowed. Out-of-sync conditions with respect to components outside the audited area in other areas in the chain of next areas, in final areas for prior releases, and in baselines are allowed.
3	8	Release audit is required. Out-of-sync conditions with respect to components outside the audited area in other areas in the chain of next areas, in final areas for prior releases, and in baselines are allowed.
4	4	Release audit is required. Warning messages allowed, usually for component in area not different from baseline.
5	0	Release audit is required. No out-of-sync errors and no warning messages allowed

Field	Description
Area approval rule	Type an approval rule for this release area. The approval rule sets requirements for approvals before check-in and check-off. The approval rules that are valid for this area are limited by the minimum approval rule specified at the release level. You can specify a more restrictive rule at the area level than the minimum rule specified at the release level, but you cannot specify a less restrictive rule.

0   No requirements.

1   This area must be approved for check-in before a package or an area can be checked in to this area.

2   This area must be approved for check-off before this area can be checked in to the next area.

3   Rules 1 and 2.

Field	Description
Area blocking rule	Type a blocking for this release area. The blocking rule sets conditions required for blocking a release area. The blocking rules that are valid for this area are limited by the minimum blocking rule specified at the release level. You can specify a more restrictive rule at the area level than the minimum rule specified at the release level, but you cannot specify a less restrictive rule. 0 No restrictions are imposed by this rule. 1 This area must be audited before it can be blocked. 2 The person blocking or unblocking this area must be permitted to the blocking security entity specified in this area. 3 Rules 1 and 2.
Blocking entity	Type a security entity that is used to verify authority to block and unblock this area as required by blocking rules 2 and 3. The blocking entity is queried only if area blocking rule 2 or 3 is specified.
Area check-in rule	Type a check-in rule for this release area. The check-in rule sets conditions required to check-in a package into an area or to check-in a release area into the next area. The check-in rules that are valid for this area are limited by the minimum check-in rule specified at the release level. You can specify a more restrictive rule at the area level than the minimum rule specified at the release level, but you cannot specify a less restrictive rule. 0 No restrictions are imposed by this rule. 1 This area must be audited before it can be checked in to the next area. 2 This area must be blocked before it can be checked in to the next area. 3 The person checking-in a package or area *into* this area must be permitted to the check-in security entity specified in this area. 4 Rules 1 and 2. 5 Rules 1 and 3. 6 Rules 2 and 3. 7 Rules 1, 2, and 3.
Check-in Entity	Type a security entity that is used to verify authorization to perform check-in to this area, as required by check-in rules 3, 5, 6, and 7. The check-in entity is queried only if area check-in rule 3, 5, 6, or 7 is specified. **NOTE:** If no check-in entity is specified, you must have UPDATE authority to an application to check-in application components. If a check-in entity is specified, you must have UPDATE authority to the check-in entity, but you only need READ authority to the application.

Field	Description
Area retrieve rule	Type a retrieve rule for this release area. The retrieve rule sets conditions required to retrieve components, packages, or areas from release areas. The retrieve rules that are valid for this area are limited by the minimum retrieve rule specified at the release level. You can specify a more restrictive rule at the area level than the minimum rule specified at the release level, but you cannot specify a less restrictive rule.
	0 No restrictions are imposed by this rule.
	1 This area must be unblocked to retrieve from the area.
	2 The person executing a retrieve from this area must be permitted to the retrieve security entity specified in this area.
	3 Rules 1 and 2.
Retrieve entity	Type a security entity that is used to verify authority to retrieve components, packages, and areas from this area as required by retrieve rules 2 and 3. The retrieve entity is queried only if area retrieve rule 2 or 3 is specified. **NOTE:** If no retrieve entity is specified, you must have UPDATE authority to an application to retrieve application components. If a retrieve entity is specified, you must have UPDATE authority to the retrieve entity, but you only need READ authority to the application.
Allow component checkout	Select to permit checkout of components from this area into packages attached to a release that specifies this release as a prior release. Checkout to packages attached to this release is also permitted. If not selected, this prohibits checkout of components from this area into packages attached to a release that specifies this release as a prior release. Checkout to a package attached to this release is only permitted if this is the starting area for the package.
Add associated approvers	Select to automatically add associated check-in and check-off approvers when the association criteria is met.
Exclude area from SYSLIB	Select to exclude libraries for this area from all SYSLIB concatenations, except for build or release audit run for this area.
Override overlaid components	Select to disable checks that prevent you from overlaying a component already in an area library. These are the checks that are disabled: ■ You cannot overlay a component that was checked in by a different userid. ■ If you are checking in from package, you cannot overlay a component checked in from a different package.

> **NOTE** In area-to-area check-in, the Area Check-in Rule (and Check-in Entity if required) *for both areas* are verified before a check-in is permitted.

This example shows the completed *release area* **Area Parameters - Part 1 of 2** panel.

```
CMNRMAC0          FIN6430 ACCTPAY Area Parameters - Part 1 of 2
Command ===>

Area description . .  Starting area for Accounts Payable components
Area step number . . . . . . . . . .  1
Area step type . . . . . . . . . . .  0          (Subsystem-0 or System-1)
Any prior area name  . . . . . . . .
The next area name . . . . . . . . .  finance
Area audit level . . . . . . . . . .  0          (0,1,2,3,4,5)
Area approval rule . . . . . . . . .  0          (0,1,2,3)
Area blocking rule . . . . . . . . .  0          (0,1,2,3,4,5,6,7)
Blocking entity  . . . . . . . . . .            (Entity Name)
Area check-in rule . . . . . . . . .  0          (0,1,2,3,4,5,6,7)
Check-in Entity  . . . . . . . . . .            (Entity Name)
Area retrieve rule . . . . . . . . .  0          (0,1,2,3)
Retrieve entity  . . . . . . . . . .            (Entity Name)


Enter "/" to select option
  /  Allow component checkout
  /  Add associated approvers
  _  Exclude area from SYSLIB
  _  Override overlaid components
```

5 After you type your entries on the *release area* **Area Parameters - Part 1 of 2** panel, press **Enter** to process those entries. The *release area* **Area Parameters - Part 2 of 2** panel is displayed.

```
CMNRMAC1          FIN6430 ACCTPAY Area Parameters - Part 2 of 2
Command ===>

Enter "/" to select option
  _  Exclude packages in DEV status
  _  Exclude packages in FRZ status
  _  Exclude packages in APR status
  _  Exclude empty packages
  _  Exclude package integrity check
```

Use this panel to bypass some test area functions in this release area.

This table defines the fields on the *release area* **Area Parameters - Part 2 of 2** panel.

Field	Description
Exclude packages in DEV status	Select to enable Test area bypasses packages in DEV status and ignores all release information for the package, such as the component in motion table.
	If not selected and the Test area processes packages in DEV status normally.
Exclude packages in FRZ status	Select to enable Test area bypasses packages in FRZ status and ignores all release information for the package, such as the component in motion table.
	If not selected then Test area processes packages in FRZ status normally.
Exclude packages in APR status	Select to enable Test area bypasses packages in APR status and ignores all release information for the package, such as the component in motion table.
	If not selected then Test area processes packages in APR status normally.

Field	Description
Exclude empty packages	Select to enable Test area function bypasses packages that are empty. Empty packages are packages with no components, online forms, or scratch/ renames utility requests.
	If not selected then Test area processes empty packages normally.
Exclude package integrity check	Select to enable Test area does not perform package integrity checks.
	If not selected then Test area bypasses package integrity checks.

NOTE Test release still examines all packages attached to a release.

6 After you type your entries on the *release area* **Area Parameters - Part 2 of 2** panel, press **Enter** to process the create area command. You are returned to the *release* **Release Area Definitions** panel, which now includes the area you just created.

```
CMNRMARL                   FIN6430 Release Area Definitions        Incomplete Areas
Command ===> _____  Scroll ===> CSR

    Area       Type      Step  Description
__  ACCTPAY    SUBSYS    0001  Starting area for Accounts Payable components
****************************** Bottom of data ******************************
```

7 Release area definitions are cross edited when you exit the *release area* **Area Parameters - Part 1 of 1** panel to return to the *release* **Release Area Definitions** panel. An error condition in an area definition is flagged by an ISPF short message on the *release* **Release Area Definitions** panel. Press **PF1** to see the long message that explains the error condition.

```
CMNRMARL                   FIN6430 Release Area Definitions        Incomplete Areas
Command ===> _____  Scroll ===> CSR

    Area       Type      Step  Description
__  ACCTPAY    SUBSYS    0001  Starting area for Accounts Payable components
****************************** Bottom of data ******************************
...
          +------------------------------------------------------+
          | CMR7005A - No System Area found for Release FIN6430. |
          +------------------------------------------------------+
```

In the above example, when you create the first area for a release, you receive the short ISPF message "Incomplete Areas" because you need at least one subsystem and one system area defined in the release.

Long and short error messages are erased when you press **Enter**. To see the error message again, type **UA** in the line command for an area row to display the *release area* **Area Parameters - Part 1 of 1** panel, then press **Enter** to process the definition again. If configuration errors are detected, error messages are displayed on the *release* **Release Area Definitions** panel. If no errors are found, the short ISPF message "Area Updated" is displayed on the panel.

When you have defined all areas for the new release, verify the definition for each area by typing **UA** in the line command for each area row to display the *release area* **Area Parameters - Part 1 of 1** panel, then press **Enter** to process the definition.

8   When you have created all required areas for your release and corrected all area
     definition errors, the *release* **Release Area Definitions** panel displays without
     messages.

```
CMNRMARL                FIN6430 Release Area Definitions        Row 1 to 3 of 3
Command ===> _____      Scroll ===> CSR

    Area      Type     Step  Description
__  ACCTPAY   SUBSYS   0001  Starting area for Accounts Payable components
__  GENLEDGR  SUBSYS   0002  Starting area for General Ledger components
__  FINANCE   SYSTEM   0003  Final area for Finance components
****************************** Bottom of data ******************************
```

Add Area Approvers

Area check-in and check-off approvers are defined in ERO Global Administration. See
"Defining the Global Approver List" on page 66.

Follow these steps to add approvers to an area.

1   Access the **Release List** through the following menu path.

     a   Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then
          press **Enter.**

     b   Type **R** on the **Option** line of the **Administration Options** panel, and press
          Enter.

     c   Type **R** on the **Option** line of the **Release Management Administration
          Options** panel, and press **Enter**.

     d   Type release selection criteria in fields on the **Release List Parameters** panel, or
          leave the fields blank. Press **Enter**, and the **Release List** panel (CMNRMRLS) is
          displayed.

```
CMNRMRLS                          Release List                     Row 1 to 3 of 3
Command ===> _____      Scroll ===> CSR

    Release  Sta  Install   Work request   Dept      Aud  Creator  Created
__  FIN6410  DEV  20151219  WR 9010        FINANCE        USER015  20151126
__  FIN6420  DEV  20160116  WR 9020        FINANCE        USER015  20151126
__  FIN6430  DEV  20160220  WR 9030        FINANCE        USER015  20151126
****************************** Bottom of data ******************************
```

     The **Release List** panel shows the releases that satisfy the selection criteria you
     typed on the **Release List Parameters** panel. If you did not enter any selection
     criteria, the **Release List** panel shows all releases.

2 On the **Release List** panel, type line command **AR** on a release. The *release* **Release Area Definitions** panel is displayed.

```
CMNRMARL                FIN6430 Release Area Definitions         Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

    Area      Type      Step  Description
__  ACCTPAY   SUBSYS    0001  Starting area for Accounts Payable components
__  GENLEDGR  SUBSYS    0002  Starting area for General Ledger components
__  FINANCE   SYSTEM    0003  Final area for Finance components
****************************** Bottom of data ******************************
```

3 On the *release* **Release Area Definitions** panel, type line command **AA** on an area. The **Global Approver Selection List** panel is displayed.

```
CMNRMGAL                Global Approver Selection List           Row 1 to 6 of 6
Command ===> _____ Scroll ===> CSR

    Security          Order
    entity   Request  no.       Description
_   ACCTPAY           0010      Accounts Payable Approver Manager
_   ACTPLEAD          0010      Lead Developer ACTP Application
_   GENLEDGR          0010      General Ledger Manager
_   GENLLEAD          0010      GENL Application Lead Programmer
_   FINACCTG          0030      Financial Accounting Manager
_   RLSEMNGR          0030      Release Manager
****************************** Bottom of data ******************************
```

NOTE This panel shows only check-in and check-off approvers from the global approver list.

This table describes the fields, commands, and line commands on the **Global Approver Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an approver.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *approver* Locate an approver. (Abbreviation: L)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command to build a list of check-in and check-off approvers to be added to the release.
	S Select an approver.
	D Deselect an approver that shows *Select* in the **Request** field.
Security entity	Displays the global approver security entity.
Request	Displays the requested action.
Order no.	Displays the notification order number defined in global approvers.
Description	Displays the approver description entered in global approvers.

4 When you have finished typing line commands on the **Global Approver Selection List** panel, press **Enter** to process the line commands, and the panel is returned with updated information in the **Request** column.

```
CMNRMGAL                 Global Approver Selection List      Row 1 to 10 of 10
Command ===> _____      Scroll ===> CSR

  Security            Order
  entity    Request   no.      Description
_ ACCTPAY             0010     Accounts Payable Approver Manager
_ ACTPLEAD  *Select*  0010     Lead Developer ACTP Application
_ GENLEDGR            0010     General Ledger Manager
_ GENLLEAD            0010     GENL Application Lead Programmer
_ INTCOORD            0010     Integration Test Coordinator
_ QATCOORD            0010     Quality Assurance Test Coordinator
_ UATCOORD            0010     User Acceptance Test Coordinator
_ UTCOORD   *Select*  0010     Unit Test Coordinator
_ FINACCTG            0030     Financial Accounting Manager
_ RLSEMNGR            0030     Release Manager
****************************** Bottom of data ******************************
```

5 When you are satisfied with the list of selected install approvers, press **PF3** to begin processing each approver on the list. The first panel displayed for each approver is the *release - area - approver* **Approver Parameters - Part 1 of 2** panel (CMNRMAA0).

```
CMNRMAA0              Approver Parameters - Part 1 of 2
Command ===> _____

Release: FIN6430     Area: ACCTPAY     Entity: ACTPLEAD

Description . . . . . . . Lead Developer ACTP Application

Order Number  . . . . . . 0010

Enter "/" to select option
  / Check-in Approver
  _ Check-off Approver

Approver List Count . . . . 0001
```

The information first displayed on the *release - area - approver* **Approver Parameters - Part 1 of 2** panel comes from the global definition. You can change all of the fields in this definition.

This table describes the fields on the *release - area - approver* **Approver Parameters - Part 1 of 2** panel.

Field	Description
Description	Displays the approver definition defined in global approver list.

Field	Description
Order Number	Type a 4-digit number to set a hierarchical order of approver notifications. Example: Approver order number 0001 is notified of a pending approval, enters their approval, then approver order number 0002 is notified of a pending approval.
	0001- 9999 Sets a hierarchical approval notification order.
	0000 Approver will not be notified and approval can be entered anytime.
Check-in Approver	Select to make this a check-in approver. When this approver is added to a release area, approval is required before check-in to the area is permitted. See "Approver Entities" on page 45. An area approver cannot be both a Check-in Approver and a Check-off approver.
Check-off Approver	Select to make this a check-off approver. When this approver is added to a release area, approval is required before the release life cycle can proceed beyond this area. See "Approver Entities" on page 45. An area approver cannot be both a Check-in Approver and a Check-off approver. If you attempt, you will get an error message CMR6018I - Check-in and Check-off approvers are mutually exclusive.
Approver List Count	Displays how many approver notification rows are defined on the notification definition panel.

❗ IMPORTANT! Assign a unique order number to each approver in an area (unique within the area), except for order number 0000.

6 After you type your entries on the *release - area - approver* **Approver Parameters - Part 1 of 2** panel, press **Enter** to process those entries. The *release - area - approver* **Approvers - Part 2 of 2** panel (CMNRMAA1) is displayed.

```
CMNRMAA1                  Approver Parameters - Part 2 of 2       Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

  Release: FIN6430        Area: ACCTPAY       Entity: ACTPLEAD

  Approver: Lead Developer ACTP Application
  Order no: 0010

   Vehicle   User(s) to notify
 _ MVSSEND   USER015
****************************** Bottom of data ******************************
```

Use this panel to define notifications for the check-in or check-off approver.

This table defines the fields on the *release* **- area -** *approver* **Approvers - Part 2 of 2** panel.

Field	Description
Line Command	I Insert a new notification.
	R Repeat an existing notification.
	D Delete an existing notification.

Field	Description
Vehicle	Type a Notification Vehicle that is enabled in Global Administration Parameters. (MVSSEND is not explicitly enabled in Global Administration Parameters, but it is always available.)
User(s) to Notify	Type one or more userids or e-mail addresses that are appropriate for the Notification Vehicle. This field is case sensitive.

These rules and conditions apply when you define notifications for an area approver.

- You are not required to define notifications for an approver.

- You can type multiple userids or e-mail addresses in the **User(s) to Notify** field.

- Use a delimiter that is appropriate for the notification vehicle to separate multiple userids or e-mail addresses. Use space as a delimiter for MVSSEND.

- If you cannot fit all userids or e-mail addresses for a notification vehicle on one row, create multiple rows with the same notification vehicle.

7   After you type your entries on the *release - area - approver* **Approvers - Part 2 of 2** panel, press **PF3**.

If you selected more than one area approver from the global approver list, the *release - area - approver* **Approver Parameters - Part 1 of 2** panel is displayed for the next selected approver. Cycle through this panel and the *release - area - approver* **Approvers - Part 2 of 2** panel for each area approver selected from the global approver list.

8   After the last selected area approver is processed, the *release - area* **Approver List** panel (CMNRMAAP) is displayed, showing the approvers you defined for the area.

```
CMNRMAAP               FIN6430 - ACCTPAY Approver Lis   Area Approver Updated
Command ===> _____ Scroll ===> CSR

   Security    Order
   entity      no.     description
__ ACTPLEAD    0010    Lead Developer ACTP Application
__ UTCOORD     0010    Unit Test Coordinator
***************************** Bottom of data *****************************
...
    +------------------------------------------------------------------+
    | CMR6033A - Area Approver ACTPLEAD has been successfully updated. |
    +------------------------------------------------------------------+
```

NOTE An approver for an area may be updated until the first approver notifications are issued for that area.

Join Application to a Release

Before you can join applications to a release, the release must have valid area definitions. See .

Follow these steps to join an application to a release.

1   Access the **Release List** through the following menu path.

a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

c Type **A** on the **Option** line of the **Release Management Configuration Options** panel, and press **Enter**.

d Type release selection criteria in fields on the **Release List Selection** panel, or leave the fields blank. Press **Enter**. and the **Release List** panel (CMNRMRAL) is displayed.

```
CMNRMRAL                         Release List                   Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20151219 WR 9010          FINANCE       USER015  00000
__ FIN6420  DEV  20160116 WR 9020          FINANCE       USER015  00000
__ FIN6430  DEV  20160220 WR 9030          FINANCE       USER015  00000
****************************** Bottom of data ******************************
```

The **Release List** panel shows the releases that have areas defined and satisfy the selection criteria you typed on the **Release List Selection** panel. If you entered no selection criteria, this panel shows all releases with areas defined.

2 On the **Release List** panel, type line command **JR** on a release. The **Join -** *release* **- Application Selection List** panel (CMNRMJAP) is displayed.

```
CMNRMJAP            Join FIN6430 Application Selection List   Row 1 to 5 of 5
Command ===> _____ Scroll ===> CSR

   Appl   Status      Application Description
_  ACTP               ACTP Accounts Payable (Base ZMF)
_  ACTR               ACTR Accounts Receivable
_  COMM               COMM Common Components (Base ZMF)
_  GENL               GENL General Ledger (Db2 Option)
_  JHFS               JHFS hfs only application
****************************** Bottom of data ******************************
```

This table describes the fields, commands, and line commands on the **Join -** *release* **- Application Select** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an application.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate an application. (Abbreviation: L) *application*
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type S to select an application.
Appl	Displays the application mnemonic from application administration.

Field	Description
Status	Displays the ERO join status of the application
Application Description	Displays the application description from application administration.

3 On the **Join - *release* - Application Selection List** panel, type line command **S** on an application. The ***release - application* - Application Parameters** (CMNRMAL0) panel is displayed.

```
CMNRMAL0          FIN6430 - ACTP - Application Parameters
Command ===>

Appl Description . . . . . . ACTP Accounts Payable (Base ZMF)

Enter "/" to select option
  _ All ERO applications related
  _ All base applications related
  _ Applications share all baselines

Join Date  . . . . . . . . . 20151130    Time . . . . . 155829
Related Applications . . . . 00000
```

This table describes the fields on the ***release - application* - Application Parameters** panel.

Field	Description
Appl Description	Displays the application description from application administration. You may update this field, and your change is only made to the application description in this release.
All ERO applications related	Select this so that all other applications defined to this release will be related to this application (the application that is now being joined or updated) for this release. If you later add a new application to this release, it is automatically included in this definition.
	Leave unselected so that all other applications defined to this release will not be automatically related to this application for this release.
	You cannot select both this field and the All Base Appls Related field. Related applications are used to build SYSLIB concatenations. If this field is selected, the value of the Related Applications field is always zero. For a description of related applications, see "Define Related Applications" on page 112.
All base applications related	Select this so that all other applications defined to base ChangeMan ZMF will be related to this application (the application that is now being joined or updated) for this release. If you later add a new application to base ZMF, it is automatically included in this definition.
	Leave this field unselected so that all other application defined to base ChangeMan ZMF will not be automatically related to this application for this release.
	You cannot select both this field and the All ERO Appls Related field. If both this field and the All ERO Appls Related field are not selected, you can select related applications individually. If this field is selected, the value of the Related Applications field is always zero. For a description of related applications, see "Define Related Applications" on page 112.

Field	Description
Applications share all baselines	If Selected then it is assumed that the same baseline dataset is defined to each specific library type across all applications. In this case the baseline associated with each library type will appear only once in the SYSLIB concatenation no matter how many times it appears in related applications. If you routinely share baselines across all applications, this field allows you to avoid having multiple instances of the same dataset name in SYSLIB concatenations.
	If not selected then the same baseline dataset is not defined to each specific library type across all applications.
Join Date	Displays the date when the join operation for this application was initiated.
Time	Displays the time when the join operation for this application was initiated.
Related Applications	Displays the number of related applications that have been defined.

After you type your entries on the *release - application - Application Parameters* panel, press **Enter**.

4   On the *release - application - Application Parameters* panel, if you specified **Y** for either the **All ERO Apps Related** field or the **All Baseline Apps Related** field, you are returned to the **Join - release - Application Selection List** panel (CMNRMJAP).

```
CMNRMJAP              Join FIN6430 Application Selectio       Application Joined
Command ===> _____       Scroll ===> CSR


   Appl   Status       Application Description
_  ACTP   *Joined*     ACTP Accounts Payable (Base ZMF)
_  ACTR                ACTR Accounts Receivable
_  COMM                COMM Common Components (Base ZMF)
_  GENL                GENL General Ledger (Db2 Option)
_  JHFS                JHFS hfs only application
****************************** Bottom of data ******************************
...
    +------------------------------------------------------------------+
    | CMR0527A - Application ACTP has been successfully joined release. |
    +------------------------------------------------------------------+
```

The short message and the **Status** field on this panel now show the application as joined.

Select one or more additional applications and cycle through the join panels until you have joined all applications that you want to include in the release.

5   On the *release - application - Application Parameters* panel, if you specified **N** for both the **All ERO Apps Related** field and the **All Baseline Apps Related** field, you must define related applications for the application that you are joining. See the next topic for instructions.

Define Related Applications

ERO facilitates the controlled sharing of components across applications with *related applications*.

A related application is an application that shares components with build processes in your application by having its area libraries and baseline libraries included in your SYSLIB

statements. Components that are shared through related applications can include like-copy, like-load, like-NCAL, and LCT components.

Unlike the two-way sharing in participating packages in the base ChangeMan ZMF product, sharing through ERO related applications is one-way. When you define a related application to your release application:

- SYSLIB statements in build processing *in your application* include libraries from the related application

- SYSLIB statements in build processing *in the related application* do not automatically include libraries from your application.

If you want two-way sharing, each application must specify the other as a related application.

> **NOTE** If you define a release management dataset name pattern that omits the ApplID node, release area components are shared across applications because they are in the same area libraries. However, you must define related applications to share baseline libraries.

These conditions must be met for related application sharing:

- Your application and the application containing components that you want to use in build processing must be joined to the release.

- The application containing components that you want to use in build processing must be defined as a *related application* in the ERO release application definition for your application.

- The library types for components that you want to use from the related application must also be defined as base ZMF library types in your application, and these library types must be added to the release application library types for your application in ERO.

- Release application library types for shared components must be included in SYSLIB definitions in the release application definition for your application.

If you are continuing from the procedure in "Join Application to a Release" on page 109, go to Step 4 on page 116. If you are adding related applications to an application that is already joined to a release, start with Step 1.

1 Access the **Release List** through the following menu path.

   a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

   c Type **A** on the **Option** line of the **Release Management Configuration Options** panel, and press **Enter**.

> **d** Type release selection criteria in fields on the **Application Release Selection**
> panel, or leave the fields blank. Press **Enter**, and the **Release List** panel
> (CMNRMRAL) is displayed.

```
CMNRMRAL                      Release List                   Row 1 to 3 of 3
Command ===> _____      Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
_  FIN6410  DEV  20151219  WR 9010          FINANCE         USER015  00000
_  FIN6420  DEV  20160116  WR 9020          FINANCE         USER015  00000
_  FIN6430  DEV  20160220  WR 9030          FINANCE         USER015  00000
****************************** Bottom of data ******************************
```

> The **Release List** panel shows the releases that have joined applications and
> satisfy the selection criteria you typed on the **Release List Parameters** panel. If
> you entered no selection criteria, this panel shows all releases with joined
> applications.

> **2** On the **Release List** panel, type line command **RA** on a release. The *release -
> **Joined Application List**** panel (CMNRMRAP) is displayed, showing applications you
> joined previously.

```
CMNRMRAP               FIN6430 Joined Application List         Row 1 to 1 of 1
Command ===> _____      Scroll ===> CSR

   Appl  Lib Sys Prm   Join Date  Application Description
__ ACTP   N   N   N    20151130   ACTP Accounts Payable (Base ZMF)
__ COMM   N   N   N    20151130   COMM Common Components (Base ZMF)
__ GENL   N   N   N    20151130   GENL General Ledger (Db2 Option)
****************************** Bottom of data ******************************
```

> This table describes the fields on the *release* **- Joined Application List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an application.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *application* Locate an application. (Abbreviation: L)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command on an application.
	AL Display the application library types.
	AS Display the application SYSLIBs
	AP Display the application promotion configuration.
	DA Delete an application.
	QA Query an application.
	RL Display a list of releases that contain this application.
	UA Update an application.
Appl	Displays the joined application mnemonic.

Field	Description
Lib	Specifies if you have library types defined for this application: Y Library types are defined. N No library types are defined.
Sys	Specifies if SYSLIB definitions exist for this application: Y At least one SYSLIB definition exists for this application. N No SYSLIB definitions exist for this application.
Prm	Specifies if promotion definitions exist for this application: Y At least one promotion definition exists for this application. N No promotion definitions exist for this application.
Join Date	Displays the date the application was joined to the release.
Application Description	Displays the application description specified when the application was joined to the release.

3 On the *release* **- Joined Application List** panel, type line command **UA** on an application row, and the *release - application* **- Application Parameters** panel is displayed.

```
CMNRMAL0          FIN6430 - ACTP - Application Parameters
Command ===>

Appl Description . . . . . . ACTP Accounts Payable (Base ZMF)


Enter "/" to select option
  _ All ERO applications related
  _ All base applications related
  _ Applications share all baselines

Join Date  . . . . . . . . . 20151130    Time . . . . . 160541
Related Applications . . . . 00001
```

This table describes the fields on the *release - application* **- Application Parameters** panel.

Field	Description
Appl Description	Displays the application description from application administration. You may update this field, and your change is only made to the application description in this release.
All ERO applications related	Select to cause all other applications defined to this release will be related to this application (the application that is now being joined or updated) for this release. If you later add a new application to this release, it is automatically included in this definition. Leave blank so that all other applications defined to this release will not be automatically related to this application for this release. You cannot select both this field and the All Base Appls Related field. Related applications are used to build SYSLIB concatenations. If this field is selected, the value of the Related Applications field is always zero.

Field	Description
All base applications related	Select so that all other applications defined to base ChangeMan ZMF will be related to this application (the application that is now being joined or updated) for this release. If you later add a new application to base ZMF, it is automatically included in this definition.

If unselected then all other application defined to base ChangeMan ZMF will not be automatically related to this application for this release.

You cannot select both this field and the All ERO Appls Related field. If both this field and the All ERO Appls Related field are blank, you can select related applications individually.
If this field is selected, the value of the Related Applications field is always zero. |
| Applications share all baselines | If selected then it is assumed that the same baseline dataset is defined to each specific library type across all applications. In this case the baseline associated with each library type will appear only once in the SYSLIB concatenation no matter how many times it appears in related applications. If you routinely share baselines across all applications, this field allows you to avoid having multiple instances of the same dataset name in SYSLIB concatenations.

When blank, the same baseline dataset is not defined to each specific library type across all applications. |
Join Date	Displays the date when the join operation for this application was initiated.
Time	Displays the time when the join operation for this application was initiated.
Related Applications	Displays the number of related applications that have been defined.

After you type your entries on the *release - application - **Application Parameters*** panel, press **Enter**.

4 On the *release - application - **Application Parameters*** panel, if you did not select both the **All ERO Applications Related** field and the **All Base Applications Related** fields, the *application - **Related Application Selection List*** panel (CMNRMDAP) is displayed.

```
CMNRMDAP             GENL Related Application Selection List      Row 1 to 4 of 4
Command ===> _____  Scroll ===> CSR

   Appl    Status      Description
_  ACTP                ACTP Accounts Payable (Base ZMF)
_  ACTR                ACTR Accounts Receivable
_  COMM                COMM Common Components (Base ZMF)
_  JHFS                JHFS hfs only application
****************************** Bottom of data ******************************
```

The *application - **Related Application Selection List*** panel displays applications in the base ChangeMan ZMF product that have not been previously selected as a related application for your application.

This table describes the fields on the *application* **- Related Application Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an application.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate an application. (Abbreviation: L) *application*
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command to build a list of related applications for the application being processed.
	S Select an application.
	D Deselect an application that shows *Select* in the **Status** field.
Appl	Displays the application mnemonic from application administration.
Status	Displays the select or deselect action requested.
Application Description	Displays the application description from application administration.

Type **S** in the line command for an application row to select that application as a related application. Type **D** in the line command to deselect an application you have previously selected.

5 When you have finished typing line commands on the *application* **- Related Application Selection List** panel, press **Enter** to process the line commands. The same panel is returned with updated information in the **Request** column.

```
CMNRMDAP          GENL Related Application Selection List       Row 1 to 4 of 4
Command ===>                                                   Scroll ===> CSR

   Appl    Status      Description
 _ ACTP                ACTP Accounts Payable (Base ZMF)
 _ ACTR                ACTR Accounts Receivable
 _ COMM   *Select*     COMM Common Components (Base ZMF)
 _ JHFS                JHFS hfs only application
****************************** Bottom of data ******************************
```

6 When you are satisfied with the list of selected related applications, press **PF3**, and the *application* **- Related Applications** panel is displayed.

```
CMNRMAL1                GENL - Related Applications             Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

    Related Applications
 _    COMM
****************************** Bottom of data ******************************
```

You can use this panel to delete related applications, or you can type * in the line command to return to the *application* **- Related Application Selection List** panel to select more applications.

7 When you are satisfied with the list of related applications on the ***application - Related Applications*** panel, press **PF3** to return to either the the **Join - *release* - Application Select** panel or the ***release* Joined Application List** panel.

> **NOTE** You must explicitly join an application to a release if you define that application as a related application to another application.

Define Application Library Types

You must define what application library types are included in each application joined to a release.

You can build special purpose releases by omitting some library types defined in Application Administration from the application joined to the release. For example, you can create a release for on-line components by omitting library types for batch components from all applications joined to the release. If you then attempt to check-in a package that contains batch components, the batch components will be disallowed from check-in, and the release cannot be blocked.

Omitting library types from an application joined to a release does not change the availability of those library types in packages outside that release.

> **NOTE** Omitting library types from release applications does not save DASD or other resources. Area libraries for a library type are only allocated when you check-in a component of that type.

There are four options for building release application library type lists:

1 Select library types from a list of types defined for the application in Application Administration.

2 Include all library types defined for the application in Application Administration.

3 Select library types from a list of types defined to the application joined to another release.

4 Include all library types defined to the application joined to another release.

When you create your first releases, you use the first two options that refer to Application Administration for a list of library types. After the initial definition of area libraries for an application, you may use the fourth option that copies all library types from an existing release. The third option is a variation where you select a subset of the library types defined to the application in another release.

This section describes how to use the first option that selects library types from the list of library types in Application Administration.

1 Access the **Release List** through the following menu path.

   a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

   c Type **A** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel (CMNRMRAL) is displayed.

```
CMNRMRAL                       Release List                  Row 1 to 3 of 3
Command ===> _____   Scroll ===> CSR

   Release  Sta  Install  Work request      Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20151219  WR 9010           FINANCE       USER015  00000
__ FIN6420  DEV  20160116  WR 9020           FINANCE       USER015  00000
__ FIN6430  DEV  20160220  WR 9030           FINANCE       USER015  00000
****************************** Bottom of data ******************************
```

The **Release List** panel shows the releases that have joined applications and satisfy the selection criteria you typed on the **Release List Parameters** panel. If you entered no selection criteria, this panel shows all releases with joined applications.

2 On the **Release List** panel, type line command **RA** on a release. The *release - Joined Application List* panel (CMNRMRAP) is displayed, showing applications you joined previously.

```
CMNRMRAP              FIN6430 Joined Application List        Row 1 to 3 of 3
Command ===> _____   Scroll ===> CSR

   Appl  Lib Sys Prm   Join Date  Application Description
__ ACTP   N   N   N    20151130   ACTP Accounts Payable (Base ZMF)
__ COMM   N   N   N    20151130   COMM Common Components (Base ZMF)
__ GENL   N   N   N    20151130   GENL General Ledger (Db2 Option)
****************************** Bottom of data ******************************
```

This table describes the fields on the *release - **Joined Application List*** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an application.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *application* — Locate an application. (Abbreviation: L)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command on an application.
	AL — Display the application library types.
	AS — Display the application SYSLIBs
	AP — Display the application promotion configuration.
	DA — Delete an application.
	QA — Query an application.
	RL — Display a list of releases that contain this application.
	UA — Update an application.
Appl	Displays the joined application mnemonic.

Field	Description
Lib	Specifies if you have library types defined for this application: Y Library types are defined. N No library types are defined.
Sys	Specifies if SYSLIB definitions exist for this application: Y At least one SYSLIB definition exists for this application. N No SYSLIB definitions exist for this application.
Prm	Specifies if promotion definitions exist for this application: Y At least one promotion definition exists for this application. N No promotion definitions exist for this application.
Join Date	Displays the date the application was joined to the release.
Application Description	Displays the application description specified when the application was joined to the release.

On the *release* **- Joined Application List** panel, type line command **AL** on an application row, and the **Library Type Build Selection Options** panel (CMNRMAL0) is displayed.

```
CMNRMAL0              Library Type Build Selection Options
Option ===> _____

1  Appl. select   Select library types from application
2  Appl. copy     Copy all library types from application
3  Rel. select    Select library types from another release
4  Rel. copy      Copy all library types from another release
```

This panel shows you four choices for building the list of library types that will be available in an application joined to the release. The example in this section uses Option 1, as explained at the start of this section.

3 On the **Library Type Build Selection Options** panel, choose Option **1** and press **Enter**. The *application* **- Library Selection List** panel (CMNRMLAL) is displayed.

```
CMNRMLAL                  ACTP Library Selection List           Row 1 to 28 of 28
Command ===>                                                    Scroll ===> CSR

   Type Request    Description
_  CPY             Copybooks
_  CP2             Copybooks for Utilities
_  CTC             Control Statements
_  DBR             DBRM
_  DOC             Documentation
_  HTH             HFS resident HTML
_  JAR             Java Archives
_  JCF             Java Class files
_  JCL             Execution JCL
_  JCT             Java JAR Build Control
_  JVL             HFS - JAVA executable class
_  JVS             HFS - JAVA source type
_  JVT             HFS - text type
_  LCT             Linkedit Control Cards
_  LOD             Executable Load Modules
_  LOS             Load for Subprograms to be Linked NCAL
_  LSH             HFS Listings
_  LST             Compressed Stage listings
_  OBJ             Object module library
_  PRC             Cataloged Procedures
_  SRC             Source for Programs to be Linked Executable
_  SRS             Source for subprograms to be Linked NCAL
_  TST             Test Library type
_  WAR             Java Web Archives
_  WCT             Java WAR Build Control
_  ZCP             Shared Baseline Components
_  ZLS             Shared Baseline Subprogram Load (NCAL)
_  ZSS             Shared Baseline Subprogram Source
****************************** Bottom of data ******************************
```

This panel lists all library types defined to the application in Application Administration. Use this panel to select library types for the application that will be available in this release.

This table describes the fields on the *application* **- Library Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a library type.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate a library type. (Abbreviation: L) *libtype*
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command on a library type.
	S Select a library type.
	D Deselect a library type that shows ***Select*** in the **Request** column. Reults in ***De-Sel*** being shown.

Field	Description
Library Type	Displays the library types defined in the *release - application* named in the panel heading.
Request	Displays the select ***Select*** or deselect ***De-Sel*** action requested.

Type **S** in the line command for a library type to select that type for the application you joined to the new release. Type **D** in the line command to deselect a library type you previously selected.

4   When you have finished typing line commands on the ***application* - Library Selection List** panel (CMNRMLAL), press **Enter** to process the line commands. The same panel is returned with updated information in the **Request** column.

```
CMNRMLAL                 ACTP Library Selection List         Row 1 to 28 of 28
Command ===> _____ Scroll ===> CSR

    Type Request   Description
_   CPY  *Select*  Copybooks
_   CP2  *Select*  Copybooks for Utilities
_   CTC  *Select*  Control Statements
_   DBR  *Select*  DBRM
_   DOC  *Select*  Documentation
_   HTH  *Select*  HFS resident HTML
_   JAR  *Select*  Java Archives
_   JCF  *Select*  Java Class files
_   JCL  *Select*  Execution JCL
_   JCT  *Select*  Java JAR Build Control
_   JVL  *Select*  HFS - JAVA executable class
_   JVS  *Select*  HFS - JAVA source type
_   JVT  *Select*  HFS - text type
_   LCT  *Select*  Linkedit Control Cards
_   LOD  *Select*  Executable Load Modules
_   LOS  *Select*  Load for Subprograms to be Linked NCAL
_   LSH  *Select*  HFS Listings
_   LST  *Select*  Compressed Stage listings
_   OBJ  *Select*  Object module library
_   PRC  *Select*  Cataloged Procedures
_   SRC  *Select*  Source for Programs to be Linked Executable
_   SRS  *Select*  Source for subprograms to be Linked NCAL
_   TST  *Select*  Test Library type
_   WAR  *Select*  Java Web Archives
_   WCT  *Select*  Java WAR Build Control
_   ZCP  *Select*  Shared Baseline Components
_   ZLS  *Select*  Shared Baseline Subprogram Load (NCAL)
_   ZSS  *Select*  Shared Baseline Subprogram Source
****************************** Bottom of data ********************************
```

Type additional line commands to change the list of selected library types, and press **Enter** to process the commands and present a new list.

5 When you are satisfied with the list of selected library types, press **PF3** to process your selections. The *release - application* **- Library Type Update List** panel (CMNRMLTL) is displayed.

```
CMNRMLTL              FIN6430 ACTP Library Type Update List     Row 1 to 28 of 28
Command ===> _____  Scroll ===> CSR

                                                          Libs.
    Type Description                                 Like Alloc. Target
__  CPY  Copybooks                                    C    N
__  CP2  Copybooks for Utilities                      C    N
__  CTC  Control Statements                           P    N
__  DBR  DBRM                                         P    N
__  DOC  Documentation                                P    N
__  HTH  HFS resident HTML                            P    N
__  JAR  Java Archives                                L    N
__  JCF  Java Class files                             L    N
__  JCL  Execution JCL                                J    N
__  JCT  Java JAR Build Control                       S    N     JAR
__  JVL  HFS - JAVA executable class                  L    N
__  JVS  HFS - JAVA source type                       S    N     JVL
__  JVT  HFS - text type                              P    N
__  LCT  Linkedit Control Cards                       K    N
__  LOD  Executable Load Modules                      L    N
__  LOS  Load for Subprograms to be Linked NCAL       N    N
__  LSH  HFS Listings                                 P    N
__  LST  Compressed Stage listings                    X    N
__  OBJ  Object module library                        O    N
__  PRC  Cataloged Procedures                         J    N
__  SRC  Source for Programs to be Linked Executable  S    N     LOD
__  SRS  Source for subprograms to be Linked NCAL     S    N     LOS
__  TST  Test Library type                            P    N
__  WAR  Java Web Archives                            L    N
__  WCT  Java WAR Build Control                       S    N     WAR
__  ZCP  Shared Baseline Components                   C    N
__  ZLS  Shared Baseline Subprogram Load (NCAL)       N    N
__  ZSS  Shared Baseline Subprogram Source            S    N     ZLS
****************************** Bottom of data *********************************
```

Use this panel to update the library type definition for this application joined to the release. You can also add or delete library types for the application.

This table describes the fields on the *release - application* **- Library Type Update List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a library type.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate a library type. (Abbreviation: L) *libtype*
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)

Field	Description
Line Command	Type a line command on a library type. DL Delete library type QL Query library type UL Update library type * Displays the **application Library Selection List** panel. You can select additional library types from this panel that shows types in Application Administration that are not selected for the application in this release.
Request	Displays the select or deselect action requested.
Lib Type	Displays the library types defined in the *release - application* named in the panel heading.
Description	Displays the library type description from the library type definition in the *release - application* named in the panel heading.
Like	Displays the ERO like values for library types. NOTE: The current version of ERO automatically assigns the following Like values to the corresponding reserved library types. For example, ERO automatically assigns Like value K to the reserved library type LCT or the value C to reserved library type CPY. You can define other, nonreserved library types and assign a Like value to them. For example, you can define a CPS library type and assign Like value C to it. As another example, you can define an SC1 library type and assign Like value S to it. C Like-Copy; reserved library type is CPY L Like-Load; reserved library type is LOD S Like-Source; reserved library type is SRC P Like-PDS; reserved library type is PDS N Like-NCAL; reserved library type is NCL O Like-Object; reserved library type is OBJ J Like-JCL; reserved library type is JCL K Like-Link-control; reserved library type is LCT X Like-Listing; reserved library type is LST Blank Like-Other
Libs. Alloc.	N Area libraries for this type have not been allocated. Y Area libraries for this type have been allocated.
Target	Displays the target like-load type for Like-Source and Like-Linkcontrol library types.

6 Type line command **UL** on a library type row, and the *application - libtype -* **Library Type Part 1 of 2** panel is displayed.

```
CMNRMLT0            ACTP CPY Library Type Part 1 of 2
Command ===>

Library description . . . Copybooks
Like value  . . . . . . . C         (C,L,S,P,N,O,J,K,X or blank)
Libraries allocated . . . N         (Y/N)
Target libtype . . . . . ___        (Available when like value = S)

Dataset attributes:
 Management class . . . . _____ (Blank for default management class)
 Storage class  . . . . . _____ (Blank for default storage class)
  Generic unit name . . . SYSDA___  (Generic group name or unit)
  Volume serial . . . . . _____    (Required if generic unit unspecified)
 Space units  . . . . . . TRK       (TRK, CYL or BLK)
 Primary quantity . . . . 00000003 (In above units)
 Secondary quantity . . . 00000001 (In above units)
 Directory blocks . . . . 00005
 Record format  . . . . . FB
 Record length  . . . . . 00080
 Block size . . . . . . . 00000
 Dataset type . . . . . . P         (P)PDS, (L)LIBRARY, H)zFS
 Dataset version  . . . . _         (BLANK, 1, 2)
 Extended attributes  . . ___       (NO, OPT or blank)
```

Use this panel to update library type space allocation parameters that are used when area libraries are allocated.

- Management class
- Storage class
- Generic unit name
- Volume serial
- Space units
- Primary quantity
- Secondary quantity
- Directory blocks
- Block Size
- Dataset type
- Dataset version
- Extended attributes

7 When you are finished adjusting space allocation parameters for area libraries, press **Enter** and the ***application - libtype - Library Type Part 2 of 2*** panel is displayed.

```
CMNRMLT1            ACTP CPY Library Type Part 2 of 2
Command ===> _____

Library Description:  Copybooks
Like Value: C    Allocated: N    Target Libtype:

Dataset Options:
 Checkout component description . . . . N
 Checkout component activity file . . . N
 Component activity file type . . . . . ___
 Staging versions allowed . . . . . . . N
 Staging versions enforced  . . . . . . N
 Submit a process . . . . . . . . . . . N

Dataset Selectable option:
 IMS Sub-Type . . . . . . . . _
 Db2 Sub-Type . . . . . . . . _
 Db2 SQL End Statement  . . . _
```

This panel displays the values for the library type in application administration. You cannot change any of the fields on this panel.

8 On the ***application - libtype - Library Type Part 2 of 2*** panel, press **Enter**, and you are returned to the ***release application* Library Type Update List** panel.

```
CMNRMLTL              FIN6430 ACTP Library Type Update List     Row 1 to 28 of 28
Command ===> _____ Scroll ===> CSR

                                                       Libs.
   Type Description                            Like  Alloc. Target
__ CPY  Copybooks                                C     N
__ CP2  Copybooks for Utilities                  C     N
__ CTC  Control Statements                       P     N
__ DBR  DBRM                                     P     N
__ DOC  Documentation                            P     N
__ HTH  HFS resident HTML                        P     N
__ JAR  Java Archives                            L     N
__ JCF  Java Class files                         L     N
__ JCL  Execution JCL                            J     N
__ JCT  Java JAR Build Control                   S     N     JAR
__ JVL  HFS - JAVA executable class              L     N
__ JVS  HFS - JAVA source type                   S     N     JVL
__ JVT  HFS - text type                          P     N
__ LCT  Linkedit Control Cards                   K     N
__ LOD  Executable Load Modules                  L     N
__ LOS  Load for Subprograms to be Linked NCAL   N     N
__ LSH  HFS Listings                             P     N
__ LST  Compressed Stage listings               X     N
__ OBJ  Object module library                    O     N
__ PRC  Cataloged Procedures                     J     N
__ SRC  Source for Programs to be Linked Executable  S  N   LOD
__ SRS  Source for subprograms to be Linked NCAL S     N     LOS
__ TST  Test Library type                        P     N
__ WAR  Java Web Archives                        L     N
__ WCT  Java WAR Build Control                   S     N     WAR
__ ZCP  Shared Baseline Components               C     N
__ ZLS  Shared Baseline Subprogram Load (NCAL)   N     N
__ ZSS  Shared Baseline Subprogram Source        S     N     ZLS
****************************** Bottom of data ******************************
```

9 From this panel, press **PF3** repeatedly to return to the menu you want, or type a jump command to go to the function directly.

Define SYSLIB Concatenations

ChangeMan ZMF ERO gives you control over how libraries are concatenated in SYSLIB statements in compile and binder JCL. The rules you set at the release application level for library concatenations are also used by release audit to validate the integrity of relationships imbedded in components created by build processing.

You configure a SYSLIB definition for these library like-types:

- Like-source - Defines the copybook library concatenation for compile SYSLIB DD statements.

- Like-load - Defines the load library concatenation for link-edit SYSLIB DD statements.

- Like-Linkcontrol - Defines the load library concatenation for binder SYSLIB DD statements.

Using the SYSLIB definition function in ERO you can:

- Include or exclude library types and assign the SYSLIB library concatenation order to get the result you want in build processes such as stage, recompile, and relink.

- Ensure that release audit uses the same libraries and the same search order as were used in component build processes, preventing false out-of-sync errors.

- Minimize the number of libraries concatenated in SYSLIB statement to stay below the IBM limit for total PDS extents concatenated under one DD statement.

You have a high degree of control over SYSLIB concatenations because each SYSLIB definition has a narrow scope:

- You create a separate SYSLIB definition for every combination of like-source library type / language / compile procedure. These rules control the like-copy SYSLIB concatenation in compile processing.

- You create a separate SYSLIB definition for every combination of target like-load library type / language / compile procedure. These rules control like-load SYSLIB concatenation in binder processing.

For example, if you have COBOL2 and assembler programs in a like-source library type SRC, and if you use only one procedure for each language, you need two SYSLIB definitions for SRC to give ERO control over compile SYSLIB concatenations:

SYSLIB Definition	Like-Source Libtype	Language	Compile Procedure
1	SRC	COBOL2	CMNCOB2
2	SRC	ASM	CMNASM

These two SYSLIB definitions can include different like-copy library types in a unique order, or they can include the same like-copy library types in the same order, but there must be a SYSLIB definition for every language / procedure combination.

- If you do not create SYSLIB definitions for like-source library types, no like-copy libraries are included in SYSLIB DD statements for compile steps.

- If you do not create SYSLIB definitions for like-load library types, the SYSLIB DD statement for link-edit in stage only includes libraries for the target like-load type. Release audit will use the same search order. Relink will not run.

- If you create a like-load SYSLIB definition but to not include any like-load library types in the definition, the SYSLIB DD statement for link-edit only includes libraries for the target like-load type.

Follow these steps to build SYSLIB definitions for an application joined to a release.

1 Access the **Release List** through the following menu path.

    a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

    c Type **A** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel is displayed.

```
CMNRMRAL                       Release List                   Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20151219  WR 9010          FINANCE         USER015  00000
__ FIN6420  DEV  20160116  WR 9020          FINANCE         USER015  00000
__ FIN6430  DEV  20160220  WR 9030          FINANCE         USER015  00000
 ***************************** Bottom of data *****************************
```

2 On the **Release List** panel, type line command **RA** on a release. The *release* **Joined Application List** panel is displayed.

```
CMNRMRAP               FIN6430 Joined Application List        Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Appl  Lib Sys Prm  Join Date  Application Description
__ ACTP   Y   N   N   20151130   ACTP Accounts Payable (Base ZMF)
__ COMM   N   N   N   20151130   COMM Common Components (Base ZMF)
__ GENL   N   N   N   20151130   GENL General Ledger (Db2 Option)
 ***************************** Bottom of data *****************************
```

This panel shows applications you joined previously

This table describes the fields on the *release* **Joined Application List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an application.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *application* — Locate an application. (Abbreviation: L)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command on an application.
	AL — Display the application library types.
	AS — Display the application SYSLIBs
	AP — Display the application promotion configuration.
	DA — Delete an application.
	QA — Query an application.
	RL — Display a list of releases that contain this application.
	UA — Update an application.
Appl	Displays the joined application mnemonic.
Lib	Specifies if you have library types defined for this application:
	Y — Library types are defined.
	N — No library types are defined.

Field	Description
Sys	Specifies if SYSLIB definitions exist for this application: Y At least one SYSLIB definition exists for this application. N No SYSLIB definitions exist for this application.
Prm	Specifies if promotion definitions exist for this application: Y At least one promotion definition exists for this application. N No promotion definitions exist for this application.
Join Date	Displays the date the application was joined to the release.
Application Description	Displays the application description specified when the application was joined to the release.

3   On the *release* **Joined Application List** panel, type line command **AS** on an application. If there are no SYSLIB definitions for this application, the **SYSLIB Build Selection Options** panel is displayed.

```
CMNRMSYO                    Syslib Build Selection Options
Option ===> _____

1  Library Types  Display list of library types and define from scratch
2  Syslib defs    Display list of definitions from another release
3  Copy           Copy all syslib definitions from another release
```

There are three options for building a set of release application SYSLIB definitions.

- Select library types from a list of all types eligible for SYSLIB definitions in this application joined to this release. Define SYSLIB definitions for the selected types.

- Select SYSLIB definitions from a list of definitions for this application joined to another release.

- Copy all SYSLIB definitions from this application joined to another release.

TIP When you create your first releases, use the first option to build SYSLIB definitions. After you have established a regular release process, you may use the second and third options that copy SYSLIB definitions from an existing release.

The steps that follow describe the process for building SYSLIB definitions using the first option.

4 On the **SYSLIB Build Selection Options** panel, choose Option **1** and press **Enter**. The *release application* **Compile/Bind Library Selection** panel (CMNRMDSL) is displayed.

```
CMNRMDSL        FIN6430 ACTP Compile/Bind Library Selection  Row 1 to 15 of 15
Command ===> _____  Scroll ===> CSR

   Lib  Request    Description                             Like    Target
_  JAR             Java Archives                           L
_  JCF             Java Class files                        L
_  JCT             Java JAR Build Control                  S       JAR
_  JVL             HFS - JAVA executable class             L
_  JVS             HFS - JAVA source type                  S       JVL
_  LCT             Linkedit Control Cards                  K
_  LOD             Executable Load Modules                 L
_  LOS             Load for Subprograms to be Linked NCAL   N
_  OBJ             Object module library                   O
_  SRC             Source for Programs to be Linked Executable  S   LOD
_  SRS             Source for subprograms to be Linked NCAL   S    LOS
_  WAR             Java Web Archives                       L
_  WCT             Java WAR Build Control                  S       WAR
_  ZLS             Shared Baseline Subprogram Load (NCAL)   N
_  ZSS             Shared Baseline Subprogram Source       S       ZLS
****************************** Bottom of data ******************************
```

This panel displays all of the release application library types that are eligible for SYSLIB definitions. These are the like-source, like-load, and like-linkcontrol library types defined to the joined application. Use this panel to select library types that you want to create SYSLIB definitions for.

This table describes fields on the *release application* **Compile/Bind Library Selection** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a library type.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *libtype* — Locate a library type. (Abbreviation: L)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command on a library type.
	S — Select a library type.
	D — Deselect a library type that shows ***Select*** in the **Request** column.
Request	Displays the select or deselect action requested.
Library Type	Displays the library types the release application named in the panel heading that are eligible for SYSLIB definitions.
Description	Displays the library type description from the library type definition in the release application named in the panel heading.

Field	Description
Like Value	Displays the ERO like values for library types. NOTE: The current version of ERO automatically assigns the following Like values to the corresponding reserved library types. For example, ERO automatically assigns Like value K to the reserved library type LCT or the value C to reserved library type CPY. You can define other, nonreserved library types and assign a Like value to them. For example, you can define a CPS library type and assign Like value C to it. As another example, you can define an SC1 library type and assign Like value S to it.
	C Like-Copy; reserved library type is CPY
	L Like-Load; reserved library type is LOD
	S Like-Source; reserved library type is SRC
	P Like-PDS; reserved library type is PDS
	N Like-NCAL; reserved library type is NCL
	O Like-Object; reserved library type is OBJ
	J Like-JCL; reserved library type is JCL
	K Like-Link-control; reserved library type is LCT
	X Like-Listing; reserved library type is LST
	Blank Like-Other
Target Type	Displays the target type for Like-Source and Like-Linkcontrol library types.

Type **S** in the line command for a library type to select that type for a SYSLIB definition. Type **D** in the line command to deselect a library type you previously selected.

TIP Until you become familiar with this function, select one library type at a time to create SYSLIB definitions. If you select more than one library type, you may get confused about where one SYSLIB definition process ends and the next begins.

5 When you have finished typing line commands on the ***release application* Compile/ Bind Library Selection** panel, press **Enter** to process the line commands. The same panel is returned with updated information in the Request column.

```
CMNRMDSL        FIN6430 ACTP Compile/Bind Library Selection  Row 1 to 15 of 15
Command ===> _____  Scroll ===> CSR

   Lib  Request   Description                             Like   Target
_  JAR            Java Archives                            L
_  JCF            Java Class files                         L
_  JCT            Java JAR Build Control                   S      JAR
_  JVL            HFS - JAVA executable class              L
_  JVS            HFS - JAVA source type                   S      JVL
_  LCT            Linkedit Control Cards                   K
_  LOD            Executable Load Modules                  L
_  LOS            Load for Subprograms to be Linked NCAL   N
_  OBJ            Object module library                    O
_  SRC  *Select*  Source for Programs to be Linked Executable  S  LOD
_  SRS            Source for subprograms to be Linked NCAL  S     LOS
_  WAR            Java Web Archives                        L
_  WCT            Java WAR Build Control                   S      WAR
_  ZLS            Shared Baseline Subprogram Load (NCAL)   N
_  ZSS            Shared Baseline Subprogram Source        S      ZLS
****************************** Bottom of data *******************************
```

Type additional line commands to change the list of selected library types, and press **Enter** to process the commands and present a new list.

6 When you are satisfied with the list of selected library types on the ***release application* Compile/Bind Library Selection** panel, press **PF3** to process your selections. The ***application libtype* SYSLIB Language/Procedure** panel (CMNRMSY0) is displayed.

```
CMNRMSY0        ACTP SRC Syslib Language/Procedure
Command ===> _____


Language . . . . . . . . . _____       (Blank or Mask for list)
Procedure  . . . . . . . . _____       (Blank or Mask for list)

Library type count . . . . 00000
```

Use this panel to qualify the selected library type with a language and procedure to build a "key" for a SYSLIB definition.

This table describes the fields on the ***application libtype* SYSLIB Language/ Procedure** panel.

Field	Description
Language Name	Type one of the following to define a language for the library type.
	Language — A stage language available in Application Administration.
	Blank — Displays all languages available in Application Administration.
	Mask — Displays a filtered list of the languages available in Application Administration.
	NOTE A mask is a filter that starts with one or more characters followed by a wildcard * to select library types that begin with the same characters.
Procedure Name	Type a one of the following to define a procedure for the library type.
	Language — A stage procedure available in Application Administration.
	Blank — Displays all procedures available in Application Administration.
	Mask — Displays a filtered list of the procedures available in Application Administration.
Library Type Count	Displays the count of library types

The simplest way to define a language and procedure is to leave ***application libtype* SYSLIB Language/Procedure** panel blank and press **Enter**. The ***application libtype* Compile Procedures** panel (CMNRMPLL) is displayed, which contains a list of valid language/procedure combinations from Application Administration.

```
CMNRMPLL                ACTP SRC Compile Procedures            Row 1 to 9 of 9
Command ===> _____  Scroll ===> CSR


    Language  Procedure  Description
__  ASM       CMNASM     Stage Assembler Source
__  C         CMNCEE     C build procedure
__  COBOLE    CMNCOBE    Stage IBM Enterprise COBOL source_____
__  COBOL2    CMNCOB2    COBOL2 source
__  COBOL2    CMNCO2OB   COBOL2 source to object
__  JAVA      CMNJAR     Create Java archive
__  JAVA      CMNJAVA    Stage Java source
__  PLI       CMNPLI     Stage PL/I Source
__  PLIE      CMNPLIE    Stage Enterprise PL/I source
****************************** Bottom of data ******************************
```

To select a language/procedure combination, type **S** in the line command for a row.

7 When you have filled the language name and a procedure name fields on the ***application libtype* SYSLIB Language/Procedure** panel or selected a language/ procedure combination on the ***application libtype* Compile Procedures** panel,

press **Enter** to display the *release application* **Copy/Include Library Selection** panel.

```
CMNRMDLS        FIN6430 ACTP Copy/Include Library Selection   Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Library type: SRC    Language: COBOL2      Procedure: CMNCOB2

   Lib  Request   Description                                  Like   Target
_  CPY            Copybooks                                     C
_  CP2            Copybooks for Utilities                       C
_  ZCP            Shared Baseline Components                    C
****************************** Bottom of data ******************************
```

This panel displays joined application library types that may be included in SYSLIB concatenations for build processing for the library type/language/procedure combination you selected on previous panels.

In the example shown here, you are creating a SYSLIB definition for a like-source library type, so the *release application* **Copy/Include Library Selection List** panel displays all like-copy library types in the joined application.   If you are creating a SYSLIB definition for a like-load library type, this panel will display all like-load library types in the joined application. If you are creating a SYSLIB definition for a like-linkcontrol library type, this panel will display all like-load library types in the joined application.

Type **S** in the line command for a library types to select that library type. Type **D** in the line command to deselect a library type that you have previously selected.

You can select multiple library types on this panel. You will define the concatenation sequence of the selected library types on the next panel.

> **NOTE** If you don't select any library types on this panel, you can add library types on the next panel. However, if you complete a like-load SYSLIB definition without including any library types in it, build processing and release audit will behave as if you included the library type for which the SYSLIB was defined. See the following example.
>
> Link-edit SYSLIB statements and audit search order processing is the same.

Like-Load Libtype	Selected Language	Selected Procedure	Selected Libtype	Default SYSLIB Behavior
LOS	COBOL2	CMNCOB2	(none)	LOS

8 When you have finished typing line commands on the *release application* **Copy/Include Library Selection** panel, press **Enter** to process the line commands. The same panel is returned with updated information in the **Request** column.

```
CMNRMDLS        FIN6430 ACTP Copy/Include Library Selection   Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Library type: SRC    Language: COBOL2      Procedure: CMNCOB2

   Lib  Request   Description                                  Like   Target
_  CPY  *Select*  Copybooks                                     C
_  CP2  *Select*  Copybooks for Utilities                       C
_  ZCP            Shared Baseline Components                    C
****************************** Bottom of data ******************************
```

9   When you are satisfied with the list of selected library types, press **PF3**, and the
application libtype **Syslib Library Order** panel (CMNRMSY1) is displayed.

```
CMNRMSY1                ACTP SRC Syslib Library Order           Row 1 to 2 of 2
Command ===>                                                   Scroll ===> CSR

    Library Type: SRC    Language: COBOL2      Procedure: CMNCOB2

    Library   Order
    type      number
 _  CPY       00000
 _  CP2       00000
****************************** Bottom of data ******************************
```

This panel shows you the library types you selected on the *release application*
Copy/Include Library Selection panel. Use this panel to set the sequence of library
types in the SYSLIB concatenation.

Overtype the zeros in the **Order Number** field to set the concatenation sequence or
library search order for the listed library types. You can also delete a library type that
you previously selected for this SYSLIB definition.

This panel shows an example of a completed *application libtype* **SYSLIB Library
Order** panel.

```
CMNRMSY1                ACTP SRC Syslib Library Order           Row 1 to 2 of 2
Command ===>                                                   Scroll ===> CSR

    Library Type: SRC    Language: COBOL2      Procedure: CMNCOB2

    Library   Order
    type      number
 _  CPY       00010
 _  CP2       00020
****************************** Bottom of data ******************************
```

In this case, libraries for type CPY will be concatenated over libraries for type CP2. The
library types for this SYSLIB definition will be listed in numerical order on subsequent
panels.

10   When you are satisfied with the library types and order numbers on the *application
libtype* **Syslib Library Order** panel, press **PF3** to process the SYSLIB definition. The
release application **Syslib Update List** panel (CMNRMSYL) is displayed, which
shows the SYSLIB definitions you have configured so far.

```
CMNRMSYL              FIN6430 ACTP Syslib Update List         SYSLIB Updated
Command ===>                                                   Scroll ===> CSR

    Type Like     Language   Procedure
 _  SRC   S       COBOL2     CMNCOB2
****************************** Bottom of data ******************************
...
    +----------------------------------------------------------------------+
    | CMR5513A - SYSLIB SRC/COBOL2/CMNCOB2 has been successfully updated. |
    +----------------------------------------------------------------------+
```

11   To continue to create more SYSLIB definitions, type ***** in the line command for a
library type row, and press **Enter**. The *release application* **Compile/Bind**

Selection panel is displayed. Go to to define the next SYSLIB concatenation.

Application SYSLIB Example

From the Admin menu, select R for ERO, then A for application, then from the Application Release Selection panel (CMNRMRAS) input sufficient information to locate the application and release you want listed. That will be on panel CMNRMRAL - Release List. Then use RA against the release and you will get a list of Joined applications on panel CMNRMRAP.

These are the library types defined to the joined ACTP application in release FIN6430. (Some library types have been removed to shorten the list.)

```
CMNRMLTL          FIN6430 ACTP Library Type Update List     Row 1 to 28 of 28
Command ===> _____        Scroll ===> CSR

                                                     Libs.
   Type Description                            Like  Alloc. Target
__ CPY  Copybooks                               C     N
__ CP2  Copybooks for Utilities                 C     N
__ CTC  Control Statements                      P     N
__ DBR  DBRM                                    P     N
...
__ JCL  Execution JCL                           J     N
__ JCT  Java JAR Build Control                  S     N      JAR
__ JVL  HFS - JAVA executable class             L     N
__ JVS  HFS - JAVA source type                  S     N      JVL
__ JVT  HFS - text type                         P     N
__ LCT  Linkedit Control Cards                  K     N
__ LOD  Executable Load Modules                 L     N
__ LOS  Load for Subprograms to be Linked NCAL  N     N
__ LSH  HFS Listings                            P     N
__ LST  Compressed Stage listings               X     N
__ OBJ  Object module library                   O     N
__ PRC  Cataloged Procedures                    J     N
__ SRC  Source for Programs to be Linked Executable S   N      LOD
...
__ ZCP  Shared Baseline Components              C     N
__ ZLS  Shared Baseline Subprogram Load (NCAL)  N     N
__ ZSS  Shared Baseline Subprogram Source       S     N      ZLS
****************************** Bottom of data ******************************
```

AS will show you the COBOL2 SYSLIB definitions within the Accounts Payable application.

These are the release application SYSLIB definitions for COBOL2 in the joined ACTP application.

```
CMNRMSYL              FIN6430 ACTP Syslib Update List        Row 1 to 5 of 5
Command ===> _____        Scroll ===> CSR

    Type Like    Language    Procedure
__  LCT   K      COBOL2      CMNCOB2
__  LOD   L      COBOL2      CMNCOB2
__  LOS   N      COBOL2      CMNCOB2
__  SRC   S      COBOL2      CMNCOB2
__  SRS   S      COBOL2      CMNCOB2
****************************** Bottom of data ******************************
```

There is a SYSLIB definition for COBOL2 for each like-source, like-load, and like-linkcontrol library type in joined application ACTP.

The next five Query SYSLIB panels show the SYSLIB definitions for the SRC, SRS, LOD, LOS, and LCT library types.

This panel tells you that when you stage or recompile a like-source component with COBOL2/CMNCOB2 in library type SRC, the SYSLIB DD statement for copybook libraries will concatenate libraries in library type CPY over libraries for library type CP2.

```
CMNRMSY1                 ACTP SRC Syslib Library Order           Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

     Library Type: SRC    Language: COBOL2     Procedure: CMNCOB2

     Library   Order
     type      number
 _   CPY       00000
 _   CP2       00000
****************************** Bottom of data ******************************
```

This panel tells you that when you stage or recompile a like-source component with COBOL2/CMNCOB2 in library type SRS, the SYSLIB DD statement for copybook libraries will concatenate libraries in library type CPY over libraries for library type CP2.

```
CMNRMSY1                 ACTP SRS Syslib Library Order           Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

     Library Type: SRS    Language: COBOL2     Procedure: CMNCOB2

     Library   Order
     type      number
 _   CPY       00010
 _   CP2       00020
****************************** Bottom of data ******************************
```

This panel tells you that when the target library type for stage or recompile for COBOL2/CMNCOB2 is LOD, the binder SYSLIB concatenation will contain only libraries for library type LOS. If you run relink with an input library type LOD, the binder SYSLIB concatenation will contain only libraries for library type LOS.

```
CMNRMSY1                 ACTP LOS Syslib Library Order           Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

     Library Type: LOD    Language: COBOL2     Procedure: CMNCOB2

     Library   Order
     type      number
 __  LOS       00010
****************************** Bottom of data ******************************
```

This panel tells you that when the target library type for stage or recompile for COBOL2/CMNCOB2 is LOS, the binder SYSLIB concatenation will contain only libraries for library type LOS.

```
CMNRMSY1                 ACTP LOS Syslib Library Order              Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

     Library Type: LOS     Language: COBOL2      Procedure: CMNCOB2

     Library    Order
     type       number
 __  LOS        00010
***************************** Bottom of data *****************************
```

If you run relink with an input library type LOS, the binder SYSLIB concatenation will
contain only libraries for library type LOS.

Associate Prior Releases

If you want build processes in your release to include components from releases that are
scheduled for installation earlier than your release, you define those earlier releases as
prior release in your release.

When you associate prior releases, you build a set of "rules" that determine what area
libraries from the prior releases are included in SYSLIB statements for build processing in
your release. These "rules" also determine what libraries are considered by release audit.

Each rule consists of:

- A release that you choose from all releases scheduled to install before your release.

- Within a selected earlier release, either all applications joined to that release or one
  application you choose from all joined applications.

- Within a selected earlier release, within selected joined applications, either all library
  types or library types that you choose from all library types.

- Within a selected earlier release, within selected joined applications, a rule you
  choose for including area libraries.

- Within a selected earlier release, within selected joined applications, within selected
  area libraries, a rule you choose for ordering those libraries in SLSYIB concatenations.

You can easily choose to include area libraries for all library types in all applications in a
prior release in the SYSLIB concatenations you use in your release, but ERO offers
multiple options to provide flexibility to include only the libraries you want.

NOTE You can associate an earlier release multiple times as a prior release if you want
multiple rules. The panels that define prior release associations prevent duplicate rules,
but they do not prevent overlapping rules. For example, you may add a prior release as a
rule with only one application, one library type, and only final area libraries. Then you
can add the same release as a rule that includes all applications, all library types, and all
area libraries. If a library covered by any prior release rule, it is included in build
processing.

This example of the *release* **- Prior Release Association** panel shows the simplest "rules" for associating two earlier releases as prior releases for release FIN6430.

```
CMNRMPRL             FIN6430 - Prior Release Association     Row 1 to 3 of 3
Command ===> _____    SCROLL ===> CSR

   Release   Appl   Install    Last area  Incl. areas  Order  All lib. types
__ FIN6410          20160430   FINANCE        N           A          Y
__ FIN6420          20160531   FINANCE        N           A          Y
__ FIN6420   ACTP   20160531   FINANCE        S           A          N
 ***************************** Bottom of data *****************************
```

These rules say:

1   Associate release FIN6410 as a prior release for FIN6430, and in all joined applications, include final area libraries for all library types.

2   Associate release FIN6420 as a prior release for FIN6430. Within release FIN6420:

    a   In joined application ACTP, include system area libraries in ascending step number order for specified library types only.

    b   In all other joined applications, include final area libraries for all library types.

This table describes the key fields on the *release* **- Prior Release Association** panel.

Field	Description
Release	Specifies the prior release to which this "rule" applies.
Appl	Specifies the joined application(s) in the prior release to which this "rule" applies. blank Indicates that this "rule" applies to all joined application in the prior release. *appl* Specifies one joined application in the prior release to which this "rule" applies.
Install	Displays Install From date for the prior release.
Last area	Displays the name of the final area in the prior release.
Incl. areas	For the specified prior release and joined applications, determines which areas are included in SYSLIB concatenations and release audit in the current release. **Note:** All prior release areas that have **Exclude Area From SYSLIB** set to **Y** in their area definitions are automatically exclude regardless of the **Include Areas** indicator here. The exception is a final area where **Include Areas** is **N**, in which case the final area is always included, regardless of the setting of the **Exclude** indicator. N Include only final area libraries. S Include only system area libraries, not subsystem area libraries. Y Include libraries in areas that are in a single path back from the final area. The area path from the final area is walked backwards until an area has more than one area checking in to it; that is the last area to be included in the SYSLIB. A Include all area libraries.

Field	Description
Order	Determines the order that selected area libraries are concatenated in SYSLIB using the step number of the release area. Where the step number is the same for two selected areas, the area defined most recently is considered to have the higher step number. D Concatenate selected area libraries in descending area step number order. Libraries from areas with higher step numbers are concatenated in front of libraries from areas with lower step numbers. A Concatenate selected area libraries in ascending area step number order. Libraries from areas with lower step numbers are concatenated in front of libraries from areas with higher step numbers.
All lib. types	For the specified prior release and joined application, indicates whether area libraries for all library types are included in SYSLIB concatenations for the current release Y Include area libraries for all library types. N Include area libraries for selected library types only.

When you first associate prior releases with your release, there are three options.

1 Through a series of layered panels, you manually select the releases that you want to associate with your release, the joined applications within each selected release, and the library types to select for each application. This choice provides the maximum control over prior release definitions, which you may need if you must manage the number of libraries concatenated in build JCL. However, this manual process requires the most effort.

2 All releases scheduled for install before your release are automatically associated with your release, but you manually select the joined applications within each prior release and the library types to select for each application. This partially automated process reduces the work you must do, but it still gives you control over the low level elements of prior release definitions.

3 All releases scheduled for install before your release are automatically associated with your release, and all joined applications and library types are included in the prior release definitions. This is a quick way to define prior releases, but you have no control over the prior release definitions.

Even when you choose the first option to manually define prior releases, you are given a "select all" choice for joined applications and a "select all" choice for library types. You can build a general "rule" for all applications in a prior release, then add more restrictive "rules" for particular applications in that prior release.

This section describes how to use the manual option to associate prior releases with your release. This is the most complicated option. The other two options for associating prior releases are composed of a subset of the steps and panels in the first option.

Follow these steps to associate prior releases.

1 Access the **Release List** through the following menu path.

    a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

c Type **R** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel is displayed.

```
CMNRMRLS                      Release List                   Row 1 to 3 of 3
Command ===> _____       Scroll ===> CSR

   Release   Sta  Install   Work request      Dept     Aud  Creator  Created
__ FIN6410   DEV  20151219  WR 9010           FINANCE       USER015  20151126
__ FIN6420   DEV  20160116  WR 9020           FINANCE       USER015  20151126
__ FIN6430   DEV  20160220  WR 9030           FINANCE       USER015  20151126
***************************** Bottom of data ******************************
```

The **Release List** panel shows the releases that satisfy the selection criteria you typed on the **Release List Parameters** panel, or it shows all releases if you did not enter any selection criteria.

2 On the **Release List** panel, type line command **PR** on a release row and press **Enter**. Line command **PR** displays prior releases associated with your release, but since your release is new, the **Prior Release Selection Options** panel is displayed.

```
CMNRMPRO               Prior Release Selection Options
Option ===> _____

1  Display        List of prior releases for selection
2  Select         All prior releases and display update lists
3  Select         All prior Releases, applications and library types
```

This panel shows you three choices for associating prior releases to the release you are creating.

The steps described in this section use Option 1, the manual process to associate prior releases and select joined applications and library types.

3 On the **Prior Release Selection Options** panel, choose Option **1** and press **Enter**. The *release* **- Prior Release Selection List** panel is displayed.

```
CMNRMRSL          FIN6430 - Prior Release Selection List     Row 1 to 2 of 2
Command ===> _____       Scroll ===> CSR

  Release     Request     Install      Last area
_ FIN6410                 20151219     FINANCE
_ FIN6420                 20160116     FINANCE
***************************** Bottom of data ******************************
```

This panel lists releases that:

- Have not been installed.

- Have a release install date that is prior to the install date of the release you are creating.

Use this panel to choose which prior releases will be associated with your release.

This table describes the fields, panel commands, and line commands on the *release -* **Prior Release Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a release. CANCEL Cancel panel without update. (Abbreviation: C) LOCATE Locate a release. (Abbreviation: L) *release* REFRESH Refresh the panel display. (Abbreviation: R)
Line Command	Type a line command on a release. S Select a release. D Deselect a release previously selected.
Release	Displays the release name.
Request	Displays the action requested by the line command you entered.
Install	Displays Install From date for the release.
Last area	Displays the name of the final area in the release.

Use line command **S** to select prior releases for your release.

TIP Until you become familiar with this function, select one prior release at a time. If you select more than one prior release, you may get confused about where the process for one prior release ends and the process for the next begins.

4 When you have finished selecting prior releases on the *release -* **Prior Release Selection List** panel, press **Enter** to process the line commands. The panel is returned with updated information in the **Request** column.

```
CMNRMRSL            FIN6430 - Prior Release Selection List    Row 1 to 2 of 2
Command ===> _____       Scroll ===> CSR

  Release    Request    Install     Last area
_ FIN6410    *Select*   20151219    FINANCE
_ FIN6420    *Select*   20160116    FINANCE
****************************** Bottom of data ******************************
```

Type additional **S** and **D** line commands to change the list of selected prior releases, and press **Enter** to process the commands and present a new list.

5 When you are satisfied with the list of selected prior releases, press **PF3** to begin processing each prior release that you selected on the list. The first panel displayed for each release is the *prior release* **- Joined Application List** panel.

```
CMNRMPR3               FIN6410 - Joined Application List     Row 1 to 4 of 4
Command ===> _____       Scroll ===> CSR

  Appl    Join date    Description
_ ACTP    20160411     ACTP Accounts Payable (Base ZMF)
_ ACTR    20160412     ACTR Accounts Receivable
_ COMM    20160412     COMM Common Components (Base ZMF)
_ GENL    20160413     GENL General Ledger (Db2 Option)
***************************** Bottom of data ******************************
```

This panel shows the applications joined to the prior release that you selected.

You can use this panel two ways:

a Press **PF3** to make a set of prior release "rules" that apply to all joined applications in the selected release.

b Type **S** in the line command for one joined application and press **Enter** to make set of a prior release "rules" that are specific to the release/application combination.

If you want to create prior release rules for individual joined applications, you can only process one application at a time. If you type **S** in the line command for several applications, only the first joined application is processed.

On the *prior release* **- Joined Application List** panel, press **PF3** or type **S** in the line command for a joined application row and press **Enter**. The *release - prior release* **- Prior Release Parameters - Part 1 of 2** panel is displayed.

```
CMNRMPR0  FIN6430 - FIN6410 Prior Release Parameters - Part 1 of 2
Command ===> _____

Install date  . . . . . . .  20161219
Last area . . . . . . . . .  FINANCE
Include areas . . . . . . .  N            (Y/N/S/A)
Area syslib order . . . . .  A            (A-Ascending, D-Descending)
Application . . . . . . . .  ACTP

Enter "/" to select option
  _ All library types

Library type count  . . . .  00000
```

Use this panel to set parameters for the release/application "rule" for the prior release.

This table describes the fields, commands, and line commands on the *release - prior release* **- Prior Release Parameters - Part 1 of 2** panel.

Field	Description
Command	Type a command, or leave Command blank to type a panel field entry.
	CANCEL Cancel panel without update. (Abbreviation: C)
Install date	Displays the Install From date for the prior release.
Last area	Displays the name of the final area in the prior release.
Include areas	Determines what area libraries from the selected release and application are included in the SYSLIB concatenation.
	N Include only final area libraries.
	S Include only system area libraries, not subsystem area libraries.
	Y Include libraries in areas that are in a single path back from the final area. The area path from the final area is walked backwards until an area has more than one area checking in to it; that is the last area to be included in the SYSLIB.
	A Include all area libraries.

Field	Description
Area syslib order	Determines the order that selected area libraries are concatenated in SYSLIB using the step number of the release area. Where the step number is the same for two selected areas, the area defined most recently is considered to have the higher step number. D Concatenate selected area libraries in descending area step number order. Libraries from areas with higher step numbers are concatenated in front of libraries from areas with lower step numbers. A Concatenate selected area libraries in ascending area step number order. Libraries from areas with lower step numbers are concatenated in front of libraries from areas with higher step numbers.
Application Name	Displays the mnemonic for the selected prior release joined application. **NOTE** This field is blank if you pressed PF3 on the *prior release - **Joined Application List*** panel to select all joined applications.
All library types	Select this to select all library types in the selected prior release joined application or applications. Omit this field to manually select library types.
Library type count	Displays the count of library types selected in the prior release joined application.

You can choose library types two ways on this panel.

a Select the **All Library Types** field if you want all appropriate library types to be included in library concatenations for prior release build process.

b Omit the selection to be asked to choose library types from a list.

> **NOTE** Whether you select or not, only appropriate library types are included in build process library concatenations. If you choose library types that are not appropriate for build processes, they are ignored.

6 If you selected the **All Libraries Field** on the *release - prior release -* **Prior Release Parameters - Part 1 of 2** panel, all library types are automatically selected for the prior release joined application, and you are returned to the *release -* **Joined Application List** panel to process the next release you selected on the *release -* **Prior Release Selection List** panel. Go to . If all prior releases on that panel have been processed, the *release -* **Prior Release Association** panel is displayed. Go to .

If you omit the **All Libraries Field** on the *release - prior release -* **Prior Release Parameters - Part 1 of 2** panel, the *release - prior release -* **Prior Release Parameters - Part 2 of 2** panel is displayed.

```
CMNRMPR1   FIN6430 - FIN6410 Prior Release Parameters - Part 2 Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

     Library Type


_
****************************** Bottom of data ******************************
```

Use this panel to select library types in the prior release joined application.

The first time this panel is displayed for a joined application in a prior release, the panel shows an empty row. Type ***** in the line command of the empty row to display the a library type selection list.

7 If you implicitly selected all joined applications for a prior release by pressing **PF3** on the *prior release* **- Joined Application List** panel in , the **GLBL - Library Selection List** panel is displayed. If you selected a particular joined application on the *prior release* **- Joined Application List** panel, the *application - Library Selection List* panel is displayed.

```
CMNRMLAL                GLBL Library Selection List           Row 1 to 38 of 41
Command ===> _____ Scroll ===> CSR

   Type Request   Description
_  CLS            CLIST
_  CPY            Copybooks
_  CP2            Copybooks for Utilities
_  CTC            Control Statements
_  DBB            Db2 BIND PLAN Commands
_  DBR            Db2 DBRM
_  DOC            Documentation
_  HTH            HFS resident HTML
_  JAR            Java Archives
_  JCF            Java Class files
_  JCL            Execution JCL
...
_  PKG            Db2 Bind Package Commands
_  PRC            Cataloged Procedures
_  SDB            Db2 Program Source
_  SPD            Db2 Stored Proc Definitions - Non-SQL
_  SPN            Db2 Stored Proc Source - Native SQL
_  SPQ            Db2 Stored Proc Source - SQL Language
_  SRC            Source for Programs to be Linked Executable
_  SRS            Source for subprograms to be Linked No b
_  STL            Db2 Stored Proc Load Modules
_  STP            Db2 Stored Proc Source - External Lan
_  TRG            Db2 Trigger Definitions
_  TST            Test Library type
_  UDF            Db2 User-Defined Function Definitions
_  WAR            Java Web Archives
_  WCT            Java WAR Build Control
```

Type **S** in the line command for a library type row to select that type for the prior release application or applications. Type **D** in the line command to deselect a library type you previously selected.

8 When you have finished typing line commands on the library type selection panel, press **Enter** to process the commands. The same panel is returned with updated information in the **Request** column.

```
CMNRMLAL                GLBL Library Selection List          Row 1 to 38 of 41
Command ===>                                                 Scroll ===> CSR

   Type Request   Description
_  CLS            CLIST
_  CPY  *Select*  Copybooks
_  CP2  *Select*  Copybooks for Utilities
_  CTC            Control Statements
_  DBB            Db2 BIND PLAN Commands
_  DBR            Db2 DBRM
_  DOC            Documentation
_  HTH            HFS resident HTML
_  JAR            Java Archives
_  JCF            Java Class files
_  JCL            Execution JCL
_  JCT            Java JAR Build Control
_  JVL            HFS - JAVA executable class
_  JVS            HFS - JAVA source type
_  JVT            HFS - text type
_  LCT            Linkedit Control Cards
_  LDB            Db2 Program Load
_  LOD  *Select*  Executable Load Modules
_  LOS  *Select*  Load for Subprograms to be LinkedNCAL
_  LSH            HFS Listings
...
_  WCT            Java WAR Build Control
```

Type additional **S** and **D** line commands to change the list of selected library types. Press **Enter** to process the line commands and present a new list.

9 When you are satisfied with the list of selected library types, press **PF3** to process your selections. The *release - prior release* **- Prior Release Parameters - Part 2 of 2** panel is displayed.

```
CMNRMPR1   FIN6430 - FIN6410 Prior Release Parameters - Part 2 Row 1 to 4 of 4
Command ===>                                                 Scroll ===> CSR

     Library Type

_     CPY
_     CP2
_     LOD
_     LOS
****************************** Bottom of data ******************************
```

This panel displays the library types you selected for the joined application or applications. Update the list by typing **D** in the line command for a library type to delete the type, or type ***** to display the library type selection list again to add more types.

10 When you are satisfied with the library types selected for the joined application or applications, **PF3** and you are returned to the *release* **- Joined Application List** panel to select process the next release you selected on the *release* **- Prior Release**

Selection List panel. Go to Step 5 on page 143. If all prior releases on that panel have been processed, the *release* **- Prior Release Association** panel is displayed.

```
CMNRMPRL              FIN6430 - Prior Release Associa    Prior Release Updated
Command ===>                                              Scroll ===> CSR


   Release    Appl   Install     Last area  Incl. areas  Order  All lib. types
   FIN6410           20151219    FINANCE        N           A         N
****************************** Bottom of data ******************************
```

This panel displays release/application "rules" you have created for prior releases.

This table describes the fields, commands, and line commands on the *release* **- Prior Release Association** panel.

Field	Description
Release	Specifies the prior release to which this "rule" applies.
Appl	Specifies the joined application(s) in the prior release to which this "rule" applies. blank Indicates that this "rule" applies to all joined application in the prior release. *appl* Specifies one joined application in the prior release to which this "rule" applies.
Install	Displays Install From date for the prior release.
Last area	Displays the name of the final area in the prior release.
Incl. areas	For the specified prior release and joined applications, determines which areas are included in SYSLIB concatenations and release audit in the current release. **Note:** All prior release areas that have **Exclude Area From SYSLIB** set to **Y** in their area definitions are automatically exclude regardless of the **Include Areas** indicator here. The exception is a final area where **Include Areas** is **N**, in which case the final area is always included, regardless of the setting of the **Exclude** indicator. N Include only final area libraries. S Include only system area libraries, not subsystem area libraries. Y Include libraries in areas that are in a single path back from the final area. The area path from the final area is walked backwards until an area has more than one area checking in to it; that is the last area to be included in the SYSLIB. A Include all area libraries.
Order	Determines the order that selected area libraries are concatenated in SYSLIB using the step number of the release area. Where the step number is the same for two selected areas, the area defined most recently is considered to have the higher step number. D Concatenate selected area libraries in descending area step number order. Libraries from areas with higher step numbers are concatenated in front of libraries from areas with lower step numbers. A Concatenate selected area libraries in ascending area step number order. Libraries from areas with lower step numbers are concatenated in front of libraries from areas with higher step numbers.

Field	Description
All lib. types	For the specified prior release and joined application, indicates whether area libraries for all library types are included in SYSLIB concatenations for the current release
	Y Include area libraries for all library types.
	N Include area libraries for selected library types only.

A release will appear more than once on this panel if there are different "rules" defined for joined applications in the prior release.

11 Use the *release* **- Prior Release Association** panel to add or delete release/application "rules" for concatenating prior release libraries in build processing for your release.

a Type **UR** in the line command for a prior release/application row to change the area libraries, concatenation order, or library types that are selected for that "rule".

a Type **DR** in the line command for a prior release/application to remove that "rule" and the library types you selected for that prior release/application combination.

b Type * in the line command for any application to display the *release* **- Prior Release Selection List** panel to add a prior release or to add a new release/application "rule" for a joined release you previously associated with your application.

Copying a Release

After you have built one or more releases in ERO, you can copy the structure of an existing release to create a new release.

The Copy Release facility copies the structure of the existing release to a new release, but it does not copy the contents of the old release. Area libraries are not allocated in the new release, and no components in the existing release are copied to the new release.

All elements of the existing release structure are copied to the new release, including:

- Release parameters
- Install approvers
- Release area definitions and parameters
- Area approvers
- Joined applications
- Application library types
- SYSLIB concatenations
- Associated prior releases

After the new release is created, you can update any element of the release to fit the requirements for the new release.

> 📝 **NOTE** Normally, you will adjust the install From and To date/times for the new release, and you will change the associated prior releases.

Follow these steps to copy a release.

1 Access the **Release List** through the following menu path.

    a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type **A** on the **Option** line of the **Administration Options** panel, and press **Enter**.

    c Type **R** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

    d Type **R** on the **Option** line of the **Release Management Configuration Options** panel, and press **Enter**.

    e Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel is displayed.

```
CMNRMRLS                        Release List                      Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Created
__ FIN6410  DEV  20151219 WR 9010           FINANCE        USER015  20151126
__ FIN6420  DEV  20160116 WR 9020           FINANCE        USER015  20151126
__ FIN6430  DEV  20160220 WR 9030           FINANCE        USER015  20151126
****************************** Bottom of data ******************************
```

The **Release List** panel shows the releases that satisfy the selection criteria you typed on the **Release List Parameters** panel, or it shows all releases if you did not enter any selection criteria. The Release List is empty until you define a release.

2 Type **CR** on the line command of the release you want to copy and press **Enter**. The **Create Release Copy** panel is displayed.

```
CMNRMRCP                     Create Release Copy
Command ===> _____

Release Name To Create . . . _____
```

3 On the **Create Release Copy** panel, type the name of the new release you want to create and press **Enter**. The *release* **Release Management Parameters Part 1 of 2** panel is displayed.

```
CMNRMRC0     FIN6470 Release Management Parameters - Part 1 of 2
Command ===> _____

Release description . . . . . FIN6460 Release for April_____
Creator . . . . . . . . . . USER015_____
Creator's Phone Number  . . . 11292_____
Work request  . . . . . . . . WR 9050_____
Department  . . . . . . . . . FINANCE_
Minimum audit level . . . . . 0      (0,1,2,3,4,5)
Minimum approval rule . . . . 0      (0,1,2,3)
Minimum blocking rule . . . . 0      (0,1,2,3,4,5,6,7)
Minimum Check-in rule . . . . 0      (0,1,2,3,4,5,6,7)
Minimum retrieve rule . . . . 0      (0,1,2,3)
SYSLIB concatenation order  . A      (A-Ascending,D-Descending)
Default IHA audit setting . . N      (Y/N/C)
Enter "/" to select option
  / Enforce IHA default setting
  _ Bypass checkin package requirements
  _ Allow empty packages to process in release
  _ Auto cleanup of packages in DEV status
  _ Auto cleanup of packages in FRZ status
  _ Auto cleanup of packages in APR status
```

This panel shows the new release name at the top, but the rest of the information on this panel comes from the release you copied.

Use this panel to change the description and parameters for the new release.

NOTE Changes to minimum rules will not be enforced unless you update release area definitions.

4   When you have finished changing the information on the *release* **Release Management Parameters Part 1 of 2** panel, press **Enter** and the *release* **Release Management Parameters - Part 2 of 2** panel is displayed.

```
CMNRMRC1     FIN6470 Release Management Parameters - Part 2 of 2
Command ===> _____

Install Date: from . . . 20160227 080000  to . . . 20160228 235900
Default scheduler  . . . MANUAL   (CMN, Manual or Other)
Contingency  . . . . . . 1        (1,2,3)

Enter "/" to select option
  / Add Associated Install Approvers
  / CMN scheduler
  / Manual scheduler
  / Other scheduler

Release Implementation Instructions:
   All packages attached to this release will be installed between
   February 27 and February 28. If there are problems with
   any part of this release, call the Release Manager.
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
```

This panel also shows the new release name, but the rest of the information on this panel comes from the release you copied.

Use this panel to set the install dates and times for the new release, and to update installation instructions.

5   When you have finished changing the information on the *release* **Release Management Parameters - Part 2 of 2** panel, press **Enter** and the **Release List** panel is displayed showing the new release you just created.

```
CMNRMRLS                      Release List              Release Created
Command ===> _____  Scroll ===> CSR

  Release  Sta  Install  Work request    Dept      Aud  Creator  Created
__ FIN6410  DEV  20151219  WR 9010        FINANCE        USER015  20151126
__ FIN6420  DEV  20160116  WR 9020        FINANCE        USER015  20151126
__ FIN6430  DEV  20160220  WR 9030        FINANCE        USER015  20151126
__ FIN6440  DEV  20160227  WR 9030        FINANCE        USER015  20160111
__ FIN6470  DEV  20160527  WR 9030        FINANCE        USER015  20160420
***************************** Bottom of data *****************************

      +----------------------------------------------------------+
      | CMR0521A - Release FIN6470 has been successfully created. |
      +----------------------------------------------------------+
```

Use the line commands on this panel to make further changes to the definition of the new release. Normally, you will change the prior releases.

Updating a Release

The procedures for updating release configuration, area definitions, and application configurations are similar to the procedures for creating these definitions. To update a release or area, use update line commands instead of **create** commands.

Chapter 7

Using Releases and Areas

This chapter describes package, release, and release area functions you use to manage a release after your release manager and application manager have created the release.

Notifying Area Check-in Approvers

Check-in approval opens a release area for package or area check-in. Check-in approval notification starts the check-in approval process by sending email and/or MVS send messages to people specified in approval definitions. Check-in approvals cannot be entered until the check-in approval notification function is executed.

Check-in approval notification also adds associated check-in approvers from the Global Release Management Approver List where conditions specified in the global definition are met in the area.

If the approval rule for an area is set to require check-in approval, and there are no check-in approvers defined for the area, execution of the check-in approval notification function sets the check-in approval flag to Y.

Follow these steps to notify check-in approvers.

1 Follow these steps to access the area for which you want to notify check-in approvers.

  a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

  b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

  c The **Release List** panel is displayed.

```
CMNRMRLF                       Release List                  Row 1 to 2 of 2
Command ===> _____     Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6420   DEV  20160116  WR 9020           FINANCE        USER015  00003
__ FIN6430   DEV  20160220  WR 9030           FINANCE        USER015  00002
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

The fields on **Release List** panel are described on page 59.

  d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to get approval for check-in. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                  FIN6420 Release Area List           Row 1 to 3 of 3
Command ===> _____     Scroll ===> CSR

     Area                      Status               Area  Prior     Next
   Name      Type    Aud  BLK  CIA  COA  CIR  COR  step  area      area
__ ACCTPAY   SUBSYS        N    N    N    N    N   0001            FINANCE
__ GENLEDGR  SUBSYS        N    N    N    N    N   0002            FINANCE
__ FINANCE   SYSTEM        N    N    N    N    N   0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

This table describes the fields on the *release* **Release Area List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an area.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *area* Locate an area. (Abbreviation: L)
	REFRESH Refresh the panel display from system files and tables. (Abbreviation: R)
Line Command	Type one of the line commands displayed at the top of the panel. Press **PF1** to see a help panel with slightly longer definitions for the line commands.
Area Name	Displays the area name
Area Type	Displays the area type.
	SUBSYS Subsystem area
	SYSTEM System area
Aud	Displays the return code from the last release audit run on this area.
Status BLK	Displays Y if the release area is blocked.
Status CIA	Displays Y if all check-in approvers have entered their approval.
Status COA	Displays Y if all check-off approvers have entered their approval.
Status CIR	Displays Y if at least one check-in approver has entered a reject.
Status COR	Displays Y if at least one check-off approver has entered a reject.
Area Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Prior Area	Displays the prior area specified in the area definition.
Next Area	Displays the next area specified in the area definition.

On the *release* **Release Area List** panel, type **NI** in the line command for the area you want to get approved for check-in. Press **Enter**, and the notifications are sent to check-in approvers according to the approver order number.

```
CMR4600I - Change Man Release FIN6430 Area ACCTPAY Check-in awaits your approval.
CN(INTERNAL)
```

NOTE If there are no check-in approvers defined for this area, the area is immediately marked as check-in approved.

When check-in notifications have been sent, the short message Area Approvers Notified is displayed on the *release* **Release Area List** panel.

```
CMNRMALF                   FIN6420 Release Area List   Area Approvers Notified
Command ===> _____ Scroll ===> CSR

       Area                   Status                 Area  Prior      Next
    Name      Type    Aud  BLK CIA COA CIR COR       step  area       area
__  ACCTPAY   SUBSYS       N   N   N   N   N         0001             FINANCE
__  GENLEDGR  SUBSYS       N   N   N   N   N         0002             FINANCE
__  FINANCE   SYSTEM       N   N   N   N   N         0003  GENLEDGR
***************************** Bottom of data *****************************
...
   +----------------------------------------------------------------------+
   | CMR6040I - Release FIN6420 Area ACCTPAY check-in approvers notified. |
   +----------------------------------------------------------------------+
```

2 Check-in approver notification is complete.

Approving an Area for Check-in

Check-in approval is an administrative process that grants permission for developers or release managers to populate the libraries for an area through the check-in function.

The requirement for check-in approval is determined by the area approval rule. Check-in approvals cannot be entered until the check-in approval notification function is executed, even if there are no notifications defined for any of the approvers.

If a check-in approver rejects the area, you must execute the Reset Check-in Approvers function. All check-in approvals entered up to that point are cleared. You must initiate the check-in approver notification process, and then enter all check-in approvals again. See for the steps to reject a check-in approval.

Follow these steps to approve an area for check-in.

1 Follow these steps to access the area that you want to approve for check-in.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                         Release List                 Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request    Dept      Aud  Creator  Pkgs
__ FIN6420  DEV  20160116  WR 9020         FINANCE        USER015  00003
__ FIN6430  DEV  20160220  WR 9030         FINANCE        USER015  00002
***************************** Bottom of data *****************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

The fields on **Release List** panel are described on .

d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to approve for check-in. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                   FIN6420 Release Area List           Row 1 to 3 of 3
Command ===> _____     Scroll ===> CSR

       Area                    Status              Area  Prior       Next
    Name      Type   Aud  BLK  CIA  COA  CIR  COR  step  area        area
___ ACCTPAY   SUBSYS       N    N    N    N    N   0001              FINANCE
___ GENLEDGR  SUBSYS       N    N    N    N    N   0002              FINANCE
___ FINANCE   SYSTEM       N    N    N    N    N   0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2 On the *release* **Release Area List** panel, type **AI** in the line command for the area you want to approve for check-in. Press **Enter**, and the **Area - *area* - Approval List** panel is displayed.

```
 CMNRMALA                AREA - ACCTPAY - Approval List        Row 1 to 4 of 4
Command ===> _____     Scroll ===> CSR

       Release: FIN6420       Status: DEV     Install date: 20160119

   Approver Description                       User     Status
   Entity Name                                Date     Time    Order #
_  Accounts Payable Approver Manager
   ACCTPAY                                                     0010
_  Lead Developer ACTP Application
   ACTPLEAD                                                    0010
_  GENL Application Lead Programmer
   GENLLEAD                                                    0010
_  User Acceptance Test Coordinator
   UATCOORD                                                    0010
****************************** Bottom of data ******************************
```

This panel shows all approvers who must approve the area before it may be the target of check-in. The list includes check-in approvers added to the area when the area was created, and it includes associated check-in approvers that are dynamically added to the area because their associated conditions are satisfied by the contents of the area.

This table describes the fields on the **Area - *area* - Approval List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an approver.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *approver* Locate an approver. (Abbreviation: L)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)

Field	Description
Line Command	Type a line command to act on an approver. A Approve the area for check-in L Display approver notifications R Reject the area for check-in X Approver association
Release ID	Displays the release ID.
STATUS	Displays the release status.
INSTALL DATE	Displays the release install From date specified in the release definition.
Approver Description	Displays the check-in approver description defined in the release area definition.
Entity Name	Displays the security entity for this approver defined in the global approver list.
ID	Displays the userid of the approver after the approval or rejection is entered.
Status	Displays the status of the approval: Blank (not entered), APPROVED or REJECTED.
Date	Displays the date that the approval or rejection was entered.
Time	Displays the system time that the approval or rejection was entered.
Order #	Displays the approver order number. This number determines the notification sequence and the required approval sequence.

3   On the **Area - *area* - Approval List** panel, type **A** in the line command for an approver and press **Enter**.

> **NOTE** The same person can enter multiple approvals on the **Area - *area* - Approval List** panel. However, if the approver order number is different for the approvers, you must leave the panel between approvals. Press **PF3** on the **Area - *area* - Approval List** panel, type **AI** in the line command for the area on the ***release* Release Area List** panel, and then press **Enter** to return to the **Area - *area* - Approval List** panel to enter more check-in approvals.

The **Area - *area* - Approval List** panel is updated with approval information, and notification is sent to approvers with the next higher check-in approver order number.

```
CMNRMALA                 AREA - ACCTPAY - Approval Lis          Area Approved
Command ===> _____   Scroll ===> CSR

          Release: FIN6420          Status: DEV      Install date: 20160119

     Approver Description                            User      Status
     Entity Name                                     Date      Time    Order #
_    Accounts Payable Approver Manager
     ACCTPAY                                                           0010
_    Lead Developer ACTP Application                 USER015   APPROVED
     ACTPLEAD                                         20160117  160422  0010
_    GENL Application Lead Programmer
     GENLLEAD                                                           0010
_    User Acceptance Test Coordinator
     UATCOORD                                                           0010
***************************** Bottom of data *****************************

   +-----------------------------------------------------------------------+
   | CMR6042I - Approver ACTPLEAD has successfully approved Area ACCTPAY. |
   +-----------------------------------------------------------------------+
```

4 Press **PF3** to return to the *release* **Release Area List** panel. Area check-in approval is complete when all approvers have entered their approval or when one approver enters a rejection. If all approvers have approved an area for check-in, the *release* **Release Area List** panel displays **Y** in the **CIA** (Check-in Approval) column.

```
CMNRMALF                     FIN6420 Release Area List           Area Approved
Command ===> _____   Scroll ===> CSR

        Area                     Status              Area  Prior     Next
     Name      Type    Aud  BLK  CIA  COA  CIR  COR  step  area      area
     ACCTPAY   SUBSYS        N    Y    N    N    N   0001            FINANCE
___  GENLEDGR  SUBSYS        N    N    N    N    N   0002            FINANCE
___  FINANCE   SYSTEM        N    N    N    N    N   0003  GENLEDGR
***************************** Bottom of data *****************************

   +-----------------------------------------------------------------------+
   | CMR6044I - Release FIN6420 Area ACCTPAY has been approved for check-in. |
   +-----------------------------------------------------------------------+
```

5 Press **PF3** to return to the **Release List** panel.

Rejecting an Area for Check-in

Check-in approvers can reject an area for check-in, denying release managers or developers permission to populate area libraries.

The requirement for check-in approval is determined by the area approval rule. Check-in approvals cannot be entered until the check-in approval notification function is executed, even if there are no notifications defined for any of the approvers.

If a check-in approver rejects the area, you must execute the Reset Check-in Approvers function. All check-in approvals entered up to that point are cleared. You must initiate the

check-in approver notification process, and then enter all check-in approvals again. See for the steps to approve an area for check-in.

Follow these steps to reject an area for check-in.

1   Follow these steps to access the area that you want to reject for check-in.

   a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c   The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                      Row 1 to 2 of 2
Command ===> _____           Scroll ===> CSR

   Release   Sta  Install   Work request      Dept      Aud  Creator  Pkgs
_  FIN6420   DEV  20160119  WR 9020           FINANCE        USER015  00003
_  FIN6430   DEV  20160220  WR 9030           FINANCE        USER015  00002
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

The fields on **Release List** panel are described on .

   d   On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to reject for check-in. The *release* **Release Area List** panel CMNRMALF is displayed.

```
CMNRMALF                   FIN6420 Release Area List               Row 1 to 3 of 3
Command ===> _____           Scroll ===> CSR

      Area                      Status            Area  Prior      Next
   Name      Type    Aud  BLK  CIA  COA  CIR  COR  step  area       area
_  ACCTPAY   SUBSYS        N    Y    N    N    N  0001             FINANCE
_  GENLEDGR  SUBSYS        N    N    N    N    N  0002             FINANCE
_  FINANCE   SYSTEM        N    N    N    N    N  0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2 On the *release* **Release Area List** panel, type **AI** in the line command for the area you want to reject for check-in. Press **Enter**, and the **Area - *area* - Approval List** panel is displayed.

```
CMNRMALA                 AREA - ACCTPAY - Approval List         Row 1 to 1 of 1
Command ===> _____        Scroll ===> CSR

         Release: FIN6430         Status: DEV     Install date: 20160220

    Approver Description                         User      Status
    Entity Name                                  Date      Time    Order #
_   Lead Developer ACTP Application
    ACTPLEAD                                                       0010
***************************** Bottom of data *****************************
```

This panel shows all approvers who must approve the area before it may be the target of check-in. The list includes check-in approvers added to the area when the area was created, and it includes associated check-in approvers that are dynamically added to the area because their associated conditions are satisfied by the contents of the area.

This table describes the fields on the **Area - *area* - Approval List** panel.

Field	Description
Command	Type a command, or leave blank to type a Line Command on an approver.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate an approver. (Abbreviation: L) *approver*
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command to act on an approver.
	A Approve the area for check-in
	L Display approver notifications
	R Reject the area for check-in
	X Approver association
Release ID	Displays the release ID.
STATUS	Displays the release status.
INSTALL DATE	Displays the release install From date specified in the release definition.
Approver Description	Displays the check-in approver description defined in the release area definition.
Entity Name	Displays the security entity for this approver defined in the global approver list.
ID	Displays the userid of the approver after the approval or rejection is entered.
Status	Displays the status of the approval: Blank (not entered), APPROVED or REJECTED.
Date	Displays the date that the approval or rejection was entered.
Time	Displays the system time that the approval or rejection was entered.
Order #	Displays the approver order number. This number determines the notification sequence and the required approval sequence.

3 On the **Area - *area* - Approval List** panel, type **R** in the line command for an approver and press **Enter**.

> **NOTE** The same person can enter multiple approvals on the **Area - *area* - Approval List** panel. However, if the approver order number is different for the approvers, you must leave the panel between approvals. Press **PF3** on the **Area - *area* - Approval List** panel, type **AI** in the line command for the area on the ***release* Release Area List** panel, and then press **Enter** to return to the **Area - *area* - Approval List** panel to enter more check-in approvals.

The **Reject Reasons** panel is displayed.

```
CMNRMARJ                        Reject Reasons
Command ===>

        Release: FIN6430        Status: DEV     Install date: 20160220
        Area:    ACCTPAY

    Area rejected for check-in on Jan 18 2016 because release planning
    deliverables are not complete.
```

If you rejected this area previously, the reject reasons you entered before are displayed. Reject reasons entered for each area approver entity, except associated approvers, are retained unless you manually erase or overtype the reject reasons when rejecting an area again.

4 Type your reasons for rejecting the area on the **Reject Reasons** panel, and press **Enter**. You are returned to the **Area - *area* - Approval List** panel, which is updated with rejection information. Notification of the rejection is sent to approvers with the next higher check-in approver order number.

```
CMNRMALA                AREA - ACCTPAY - Approval Lis          Area Rejected
Command ===>                                              Scroll ===> CSR

        Release: FIN6430        Status: DEV     Install date: 20160220

  Approver Description                           User      Status
  Entity Name                                    Date      Time    Order #
_ Lead Developer ACTP Application                USER015   REJECTED
  ACTPLEAD                                       20160117  164625  0010
***************************** Bottom of data *****************************

  +--------------------------------------------------------------------+
  | CMR6043I - Approver ACTPLEAD has successfully rejected Area ACCTPAY. |
  +--------------------------------------------------------------------+
```

5 Press **PF3** to return to the ***release* Release Area List** panel. Area check-in approval is complete when all approvers have entered their approval or when one approver

enters a rejection. If an approver has rejected an area for check-in, the ***release*** **Release Area List** panel displays **Y** in the CIR (Check-in Reject) column.

```
CMNRMALF                    FIN6430 Release Area List              Area Rejected
Command ===> _____    Scroll ===> CSR

       Area                    Status              Area  Prior      Next
    Name     Type     Aud  BLK  CIA  COA  CIR  COR  step  area       area
___  ACCTPAY  SUBSYS        N    N    N    Y    N    0001             FINANCE
___  GENLEDGR SUBSYS        N    N    N    N    N    0002             FINANCE
___  FINANCE  SYSTEM        N    N    N    N    N    0003  GENLEDGR
****************************** Bottom of data ******************************


 +------------------------------------------------------------------------+
 | CMR6045I - Release FIN6430 Area ACCTPAY has been rejected for check-in. |
 +------------------------------------------------------------------------+
```

6 Press **PF3** to return to the **Release List** panel.

Checking-in an Area

Area check-in copies components from the libraries for one area into the libraries for another area. Check-in advances release components through the hierarchy of areas that progressively integrate release components and pass them through environments for higher order testing.

Area check-in accomplishes these objectives:

- Populates the area application libraries for the next area defined for the release.

- Makes the components available to build processes in other packages in the same application that are attached to the release.

- Makes the components available to build processes in other packages in the same application that define this release as a prior release.

- Makes the components available to build processes in packages in other applications if this application is defined as a related application.

- Continues the process of squeezing out multiple versions of the same component that are in development at the same time and are intended for install at the same time.

NOTE The base ChangeMan ZMF product Checkout encourages you to manage different versions of the same component that are in development at the same time by displaying check-out conflict messages and concurrent development messages. In contrast, ERO guarantees that a release will contain only one version of a component in an application by funneling all components through release area libraries that eventually converge in a set of libraries for the final system area.

Check-in area to area is subject to these rules and conditions.

- The target area for area check-in is predetermined. When you define an area in a release, you specify the next area.

- The check-in rule for the area to be checked in determines whether the area must be audited or blocked before check-in to the next area is allowed.

- The check-in rule for the target area can restrict who can perform check-in to the target area.

- A single check-in operation copies components from a set of release area application libraries into the corresponding set of area application libraries in the next area. If there are several applications joined to a release, you perform multiple check-in operations to copy all area components to the next area.

- You can check-in all components from a selected application, or you can check-in selected components from a selected application.

- If a component already exists in the target area library, you must explicitly override a "check-in components disallowed" condition to overlay the component.

- A component in a target area library can only be overlaid by the person who last checked in the component to the target area. This rule can be overridden in the definition of the target area.

- If a component that already exists in an area library cannot be overlaid, it must be retrieved before it can be checked in again.

Follow these steps to check-in a release area to the next area.

1 Follow these steps to access the area that you want to check-in.

a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release   Sta  Install   Work request       Dept     Aud  Creator  Pkgs
__ FIN6420   DEV  20160119  WR 9020            FINANCE        USER015  00003
__ FIN6430   DEV  20160220  WR 9030            FINANCE        USER015  00002
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to check-in. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                   FIN6420 Release Area List             Row 1 to 3 of 3
Command ===> _____  Scroll ===> CSR

     Area                      Status              Area  Prior     Next
   Name     Type    Aud  BLK  CIA  COA  CIR  COR  step  area      area
__ ACCTPAY  SUBSYS       Y    Y    Y    N    N    0001            FINANCE
__ GENLEDGR SUBSYS       N    Y    N    N    N    0002            FINANCE
__ FINANCE  SYSTEM       N    Y    N    N    N    0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on page 156.

2 On the *release* **Release Area List** panel, type **CI** in the line command of the area that you want to check-in to the next area. Press **Enter** and the *release* **- Joined Application List** panel is displayed.

```
CMNRMAFL               FIN6420 - Joined Application List       Row 1 to 5 of 5
Command ===>                                                  Scroll ===> CSR

   Appl   Join date   Application description
_  ACTP   20160111    ACTP Accounts Payable (Base ZMF)
_  ACTR   20160111    ACTR Accounts Receivable
_  COMM   20160111    COMM Common Components (Base ZMF)
_  GENL   20160111    GENL General Ledger (Db2 Option)
_  JHFS   20160111    JHFS hfs only application
****************************** Bottom of data ******************************
```

This panel shows the applications joined to the release that you selected. Use this panel to select applications to copy to the next area. Depending on ERO global parameter settings, an application can be manifested as a set of release area libraries populated by components originally checked in from change packages in a single application.

3 On the *release* **- Joined Application List** panel, type **S** in the line command for one or more application rows that you want to check-in. You can also type **SETALL** and **SETOFF** in the Command line to select or deselect all applications. Press **Enter**, and the **Release Area to Area Check-in Options** panel is displayed.

```
CMNCKI50                Area to Area Check-in Options
Option  ===>

   Release: FIN6420      Area: ACCTPAY     Application: ACTP

1  Area          Check-in components from area libraries
2  Area Parms    Check-in component list area selection criteria

Report Format . . . . . SHORT (Long/Short-errors only)

Enter "/" to select option
  _ Eligible Components only
  _ Exclude Superseded
  _ Batch Check-in
```

This table describes fields and options on the **Release Area to Area Check-in Options** panel.

Field	Description
Release	Displays the release that contains the area you are checking-in.
Area	Displays the area that you are checking-in to the next area.
Application	Displays the application that you selected to copy to the next release area application libraries.
Report Format	Type an online report format for the results of the check-in process.
	Short Only display components with check-in errors. (Abbreviation: S)
	Long Display all components requested for check-in. (Abbreviation: L)

Field	Description
Eligible Components	Select this to display only application components that are eligible for checkin, including overlays that may be overridden.
	If not selected, then this will display all application components in the area to be checked in.
Exclude Superseded	This option is enabled only if **Eligible Components** is selected.
	Select this to display only application components that are eligible for checkin, including overlays that may be overridden, but excluding any component that will overlay a component in the area with a newer last staged date, regardless of the hash token, SETSSI, user ID, or originating package.
	If not selected, then display only application components that are eligible for checkin, including overlays that may be overridden.
Batch Check-in	Type an option to determine whether check-in runs online with your terminal locked, or in a batch job.
	Select this to create batch JCL and submit a job to free your terminal while check-in is processing.
	If not selected, then process check-on online with your terminal locked.
Options	Choose an option to display a list of components to select for check-in.
	1 Area Display all area components on the **Release Checkin** *area* **Components** panel where you select components for check-in.
	2 Area Parm Display the **Component Release Area Check-in List Parameters** panel where you to specify area component filters, then display the filtered list on the **Release Checkin** *area* **Components** panel where you select components for check-in.

4 Choose one of the options on the **Release Area to Area Check-in Options** panel and press **Enter**.

- If you chose option **1 Area**, the **Release Checkin** *area* **Components** panel is displayed. The panel lists all components in the release application area libraries.

- If you chose option **2 Area Parms**, the **Component Release Area Check-in List Parameters** panel is displayed, where you to specify component filters, When you

press **Enter**, the **Release Checkin *area* Components** panel is displayed. This panel shows only the release area application components that passed the filters.

```
CMNCKI52  RELEASE CHECKIN ACCTPAY Components           Row  000001 Of  000026
Command ===> _____  Scroll ===> CSR

  Component         Type Like Checked in to area  Orig. pkg  User     Area
_ ACPCTC10          CTC  P    2010-12-02-13.48.12 ACTP000039 USER239  ACCTPAY
_ ACPJCL20          JCL  J    2010-12-02-13.48.12 ACTP000039 USER239  ACCTPAY
_ ACPPRC10          PRC  R    2010-12-09-11.49.30 ACTP000039 USER239  ACCTPAY
_ ACPPRC20          PRC  R    2010-12-02-13.48.12 ACTP000039 USER239  ACCTPAY
_ ACPSRC1A          LOD  L    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC1A          LST  X    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC1A          SRC  S    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC2A          LOD  L    2010-12-02-13.48.12 ACTP000039 USER239  ACCTPAY
_ ACPSRC2A          LST  X    2010-12-02-13.48.12 ACTP000039 USER239  ACCTPAY
_ ACPSRC2A          SRC  S    2010-12-02-13.48.12 ACTP000039 USER239  ACCTPAY
_ ACPSRC30          LCT  K    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC30          LOD  L    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC30          LOS  N    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC30          LST  X    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC50          LOD  L    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
_ ACPSRC50          LOS  N    2010-12-02-13.48.34 ACTP000038 USER239  ACCTPAY
```

The **Release Checkin *area* Components** panel shows a list of components for you to select for check-in.

This table described the fields on the **Release Checkin *area* Components** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *component* — Locate a component. (Abbreviation: L)
	SETALL — Sets all line commands to S to select all listed components.
	SETOFF — Sets all line commands to blank to deselect all selected components.
Line Command	Type S to select a component for check-in.
Component	Displays the component name.
Type	Displays the component library type.
Like	Displays the library Like-type for the component.
Checked in to area	Displays the date and time that the component was checked in to the area.
Orig. pkg	Displays the name of the change package that contains the component now in the area library.
User	Displays the userid of the last person to change the component in the change package.
Area	Displays the name of the current area (the area to be copied from).

NOTE You can check-in a large number of components without selecting each component individually. Filter the list of application area components with selection criteria on the **Component Release Area Check-in List Parameters** panel, then use the **SETALL** command on the **Release Checkin *area* Components** panel select all of the listed components.

5 When you are satisfied with your selections on the **Release Checkin *area* Components** panel, press **Enter** to process your selections. If there are problems with check-in for any selected component, the **Release Checkin Components Disallowed** panel is displayed.

```
CMNCKI53 RELEASE CHECKIN Components Disallowed         Row  000001 Of  000001
Command ===> _____ Scroll ===> CSR

  Component       Type Checked in to area   Orig. pkg  User   Shared Reason
_ ACPPRC10        PRC  2010-12-09-12.25.53  GENL000005 USER239        OVERLAY
***************************** Bottom of Data *******************************
```

This table describes the fields on the **Release Checkin Components Disallowed** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *component* — Locate a component. (Abbreviation: L)
	SETALL — Sets all line commands to S to select all listed components.
	SETOFF — Sets all line commands to blank to deselect any selected components.
Line Command	Type **S** to override a check-in disallowed condition and process the component for check-in.
SELECTED COMPONENT NAME	Displays the name of the disallowed component.
LIB TYPE	Displays the component library type.
DATE/TIME COMPONENT CHECKED IN TO AREA	Displays the date and time that the component now in the target area library was originally checked in.
ORIGINATING PACKAGE	Displays the name of the package that contained the component now in the target area library.
USER ID	Displays the userid of the last person to change the component.
BASELINE SHARED	Displays Yes if the baseline library for the disallowed component is shared with other library types.
REASON	Displays the reason that the component was disallowed from check-in.
	OVERLAY — The component has already been checked in into the area.
	NO AUTH — You have no authority to check in the component.
	NO BUN — The Baseline Unique Number for the component library type is missing.
	NO MBR — The component has no corresponding member in the area library.
	AREALCK — The component is locked in the area by another user.
	CKILOCK — The component is locked in the area by an uncompleted checkin process.

You can override components disallowed from checkin if the reason is **OVERLAY** and one of these is true:

- You are checking in the component with the same TSO ID that checked in the component previously.

- Your release manager set an indicator in the release area definition that allows check-in overlay by components from different TSO IDs.

From the **Release Checkin Components Disallowed** panel, possible courses of action include.

- Type **CANCEL** on the Command line to abandon the check-in process and return to the **Release Check-In Options** panel.

- Press **PF3** to return to the **Release Checkin *area* Components** panel to change your selections for check-in.

- Press **Enter** to continue with check-in without processing the components displayed on the **Release Checkin Components Disallowed** panel.

- Type **S** in the line command for one or more components to attempt an override of the overlay condition. You can use **SETALL** and **Enter** to select all disallowed components. Press **Enter** to continue processing components for check-in, including the components you selected for override.

6 If ERO finds no conditions to disallow components, or if you decide to continue the check-in process from the **Release Checkin Components Disallowed** panel and press **Enter**, check-in is executed.

If you specified **Long** in the **Report Format** field on the **Release Area to Area Check-in Options** panel, the **Checkin *area* to *area* Long Summary** panel is displayed. This panel shows the status of the check-in process for every component selected for check-in.

```
CMNCKI57 KIN ACCTPAY to FINANCE Long Summary              Checkin Complete
Command ===> _____  Scroll ===> CSR
                               Area    CIM   History Checkin
Component        Type   Area   Copy    table   table component status
ACPCTC10         CTC    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPJCL20         JCL    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPPRC20         PRC    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC1A         LOD    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC1A         LST    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC1A         SRC    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC2A         LOD    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC2A         LST    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC2A         SRC    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30         LCT    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30         LOD    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30         LOS    FINANCE Recomp. RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30         LST    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC50         LOD    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC50         LOS    FINANCE Recomp. RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC50         LST    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC99         LOD    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC99         LST    FINANCE RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC99         SRC    FINANCE Recomp. RC=0000 RC=0000 CHECKIN WAS COMPLETED
```

If you specified **Short** in the **Report Format** field on the **Release Area to Area Check-in Options** panel, the **Checkin *area* to *area* Short Summary** panel is displayed. This panel lists components where there was a problem in the check-in

process. If there were no problems, the panel shows a summary line FOR ALL COMPONENTS.

```
CMNCKI57 KIN ACCTPAY to FINANCE Short Summary          Checkin Complete
Command ===> _____ Scroll ===> CSR
                            Area    CIM   History Checkin
Component       Type  Area  Copy   table   table  component status
FOR ALL COMPONENTS    FINANCE  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
****************************** Bottom of Data ******************************
```

NOTE If you select like-source components for check-in, area components with a source-to-load relationship to the selected components are also checked-in.

This table describes the fields on the **Checkin *area* to *area* Long Summary** panel.

Field	Description
RELEASE COMPONENT NAME	Displays the name of area component requested for check-in.
LIB TYPE	Displays the library type of the component.
RELEASE AREA	Displays the name of the release area that is the target for check-in.
AREA COPY	Displays the return code from the copy from area library to release area library.
CIM TABLE	Displays the return code from the component-in-motion table update.
HISTORY TABLE	Displays the return code from the history table update.
RELEASE AREA CHECKIN COMPONENT STATUS	Displays the status of the component in the check-in process.

7   Press **Enter** to return to the **Release Area to Area Check-in Options** panel and then press **PF3**. If there are more applications to check in, the **Application** field on the **Release Area To Area Check-In Options** panel displays the next selected application. Execute the release area checkin process for the next application, starting at #4 above.

8   When there are no more applications to check in and you press **PF3** on the **Release Area To Area Check-In Options** panel, you are returned to the *release* **Release Area List** panel.

Area check-in is complete.

Retrieving from an Area

The retrieve area function removes components from area libraries.

You must retrieve components from area libraries to:

- Detach a package from a release.

- Check-in a new version of the component from a different package.

- Check-in a component by a person different from the person who last checked in the component.

> **NOTE** You cannot edit components in an area library. After your package is attached to a release and components are checked in, you change those components in package staging libraries using ChangeMan ZMF package functions. You can only change a component in an area library by checking-in a new version to the area.

Area retrieve is subject to these rules and conditions.

- The retrieve rule for an area determines whether you can retrieve from the area if it is blocked. The retrieve rule can also restrict who can perform retrieve from the area.

- You can retrieve all components in an area or you can retrieve selected components. If you want to remove all components that originated in a particular package, use the package retrieve function. See .

- A single area retrieve operation removes components from a set of release area application libraries. If there are several applications joined to a release, you perform multiple retrieve operations to remove all components from the area.

Follow these steps to retrieve components from a release area.

1 Follow these steps to access the release area that you want to retrieve.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____         Scroll ===> CSR

   Release  Sta  Install  Work request      Dept       Aud  Creator  Pkgs
   FIN6410  DEV  20160328  WR 9010          FINANCE          USER015  00001
   FIN6430  DEV  20160328  WR 9030          FINANCE          USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have change packages attached to them.

    d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to retrieve. Press **Enter**, and the *release Release Area List* panel is displayed.

```
CMNRMALF                   FIN6410 Release Area List              Row 1 to 3 of 3
Command ===>                                                    Scroll ===> CSR

       Area                    Status              Area  Prior      Next
    Name      Type   Aud  BLK  CIA  COA  CIR  COR  step  area       area
    ACCTPAY   SUBSYS  00    N    N    N    N    N  0001             FINANCE
    GENLEDGR  SUBSYS        N    N    N    N    N  0002             FINANCE
    FINANCE   SYSTEM        N    N    N    N    N  0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* ***Release Area List*** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2   On the *release* **Release Area List** panel, type **RT** in the line command of the area that you want to retrieve, and press **Enter**. The *release* **- Joined Application List** panel is displayed.

```
CMNRMAFL              FIN6410 - Joined Application List       Row 1 to 5 of 5
Command ===> _____        Scroll ===> CSR

   Appl   Join date   Application description
_  ACTP   20160111    ACTP Accounts Payable (Base ZMF)
_  ACTR   20160111    ACTR Accounts Receivable
_  COMM   20160111    COMM Common Components (Base ZMF)
_  GENL   20160111    GENL General Ledger (Db2 Option)
_  JHFS   20160323    JHFS hfs only application
****************************** Bottom of data ******************************
```

This panel shows the applications joined to the release you selected. Use this panel to select a set of release area application libraries to retrieve from.

3   On the *release* **- Joined Application List** panel, type **S** in the line command for one or more application rows that you want to retrieve. You can also type **SETALL** and **SETOFF** in the Command line to select or deselect all applications. Press **Enter**, and the **Release Area Retrieve Options** panel is displayed.

```
CMNRTV50                 Release Area Retrieve Options
Option ===> _____

Release: FIN6410     Area: ACCTPAY      Application: ACTP

1  Area           Retrieve components from area libraries
2  Area Parms     Retrieve component list area selection criteria

Report format . . . LONG    (Short-errors only; long-all components)

Enter "/" to select option
  _ Batch Retrieve
```

> **NOTE** Here, we are retrieving from area ACCTPAY, which fits with the example in "Checking-in an Area" on page 165, where we checked in area ACCTPAY into area FINANCE.

This table describes fields and options on the **Release Area Retrieve Options** panel.

Field	Description
Release	Displays the release that contains the area you are retrieving from.
Area	Displays the area that you are retrieving from.
Application	Displays the application that you selected to retrieve from
Report Format	Type an online report format for the results of the retrieve process.
	Short Only display components with retrieve errors. (Abbreviation: S)
	Long Display all components requested for retrieve. (Abbreviation: L)

Field	Description
Batch Retrieve	Choose an option to determine whether retrieve runs online with your terminal locked or in a batch job.
	Select to create batch JCL and submit a job to free your terminal while retrieve is processing.
	Blank will process a retrieve online with your terminal locked.
Options	Choose an option to display a list of components to select for check-in.
	1 Area — Display all package components on the **Release Checkin** *area* **Components** panel where you select components for check-in.
	2 Area Parms — Display the **Component Release Area Retrieve List Parameters** panel where you to specify area component filters, then display the filtered list on the **Release Retrieve** *area* **Components** panel where you select components for retrieve.

4 Choose one of the options on the **Release Area Retrieve Options** panel and press **Enter**.

- If you chose option **1 Area**, the **Release Retrieve** *area* **Components** panel is displayed. The panel lists all components belonging to the selected application that are checked-in into the area you are retrieving from.

- If you chose option **2 Area Parms**, the **Component Release Area Retrieve List Parameters** panel is displayed, where you to specify component filters. When you press **Enter**, the **Release Retrieve** *area* **Components** panel is displayed. The panel shows only the components belonging to the selected application that are checked-in into the area you are retrieving from that passed the filter.

```
CMNCKI52  RELEASE RETREIVE ACCTPAY Components              Row  000001 Of  000026
Command ===> _____      Scroll ===> CSR

  Component       Type Like Checked in to area  Orig. pkg   User      Area
_ ACPCTC10        CTC  P    2016-04-13-11.25.12 ACTP000039  USER239   FINANCE
_ ACPJCL20        JCL  J    2016-04-13-11.25.12 ACTP000039  USER239   FINANCE
_ ACPPRC20        PRC  R    2016-04-13-11.25.12 ACTP000039  USER239   FINANCE
_ ACPSRC1A        LOD  L    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC1A        LST  X    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC1A        SRC  S    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC2A        LOD  L    2016-04-13-11.25.12 ACTP000039  USER239   FINANCE
_ ACPSRC2A        LST  X    2016-04-13-11.25.12 ACTP000039  USER239   FINANCE
_ ACPSRC2A        SRC  S    2016-04-13-11.25.12 ACTP000039  USER239   FINANCE
_ ACPSRC30        LCT  K    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC30        LOD  L    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC30        LOS  N    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC30        LST  X    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC50        LOD  L    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC50        LOS  N    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
_ ACPSRC50        LST  X    2016-04-13-11.25.12 ACTP000038  USER239   FINANCE
```

The **Release Retrieve** *area* **Components** panel shows a list of components for you to select for retrieve from the area.

This table describes the fields on the **Release Retrieve *area* Components** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *component* — Locate a component. (Abbreviation: L)
	SETALL — Sets all line commands to S to select all listed components.
	SETOFF — Sets all line commands to blank to deselect all selected components.
Line Command	Type S to select a component for retrieve.
Component	Displays the component name.
Type	Displays the component library type.
Like	Displays the library Like-type for the component.
Checked in to area	Displays the date and time that the component was checked in to the area.
Orig. pkg	Displays the name of the change package that contained the component now in the area library.
User	Displays the userid of the last person to change the component in the change package.
Area	Displays the name of the current area.

> **NOTE** You can retrieve a large number of components without selecting each component individually. Filter the list of application area components with selection criteria on the **Component Release Area Retrieve List Parameters** panel, then use the **SETALL** command on the **Release Retrieve *area* Components** panel to select all of the listed components.

5 When you are satisfied with your selections on the **Release Retrieve *area* Components** panel, press **Enter** to process your selections.

If you specified **Long** in the **Report Format** field on the **Release Area Retrieve Options** panel, the **Release Retrieve Long Summary** panel is displayed. This panel shows the status of the retrieve process for every component selected for retrieve.

```
CMNCKI57 EVE ACCTPAY to FINANCE Long Summary              Retrieve Complete
Command ===>                                              Scroll ===> CSR
                             Area    CIM    History Checkin
Component       Type   Area  Copy    table   table  component status
ACPCTC10        CTC    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPJCL20        JCL    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPPRC20        PRC    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC1A        LOD    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC1A        LST    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC1A        SRC    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC2A        LOD    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC2A        LST    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC2A        SRC    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30        LCT    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30        LOD    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30        LOS    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30        LST    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC50        LOD    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC50        LOS    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC50        LST    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC99        LOD    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC99        LST    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC99        SRC    FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
```

If you specified **Short** in the **Report Format** field on the **Release Area Retrieve Options** panel, the **Release Retrieve Short Summary** panel is displayed. This panel lists components where there was a problem in the retrieve process. If there were no problems, the panel shows a summary line FOR ALL COMPONENTS.

```
CMNRTV57 - RELEASE RETRIEVE Short Summary                Retrieve Complete
Command ===>                                             Scroll ===> CSR

Release         Lib    Release  Area     CIM    History Release area retrieve
component       type   area     delete   table   table  component status
FOR ALL COMPONENTS     FINANCE  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
***************************** Bottom of Data *****************************
```

This table describes the fields on the **Release Retrieve Long Summary** panel.

Field	Description
Release component	Displays the names of the components requested for retrieve.
Lib type	Displays the library type of the component.
Release area	Displays the name of the release area from which the retrieve was requested.
Area delete	Displays the return code from the operation that deletes the component from the release area applications library.
CIM table	Displays the return code from the component-in-motion table update.
History table	Displays the return code from the history table update.
Release area retrieve component status	Displays status of the component in the retrieve process.

6 Press **Enter** to return to the **Release Area Retrieve Options** panel and then press **PF3**. If there are more applications to retrieve, the **Application** field on the **Release Area Retrieve Options** panel displays the next selected application. Execute the release area retrieve process for the next application, starting at #4 above.

7 When there are no more applications to retrieve and you press **PF3** on the **Release Area Retrieve Options** panel, you are returned to the release **Release Area List** panel.

8 Area retrieve is complete.

Auditing an Area

ChangeMan ZMF maintains the integrity of the components and applications under ERO control through the Release Audit, which is more sophisticated than the package audit delivered with the ChangeMan ZMF base product. Release Audit examines the components in libraries for a particular release area, as well as libraries for other areas in the release, libraries in prior releases that will be installed sooner, and baseline libraries. It evaluates relationships between different versions of the same component, and it evaluates relationships between components and other components they include like copybooks and statically linked load modules.

See Chapter 10, "Auditing Release Areas" on page 311.

Testing an Area

The ERO test area function compares the contents of a system or subsystem area to the contents of packages attached to the release. Error conditions are displayed online.

As you consolidate package components in a release and as you work in packages to correct errors you find in release testing, you may create mismatches between the contents of areas and the contents of packages attached to the release. When you block a release, ERO automatically executes a test to detect mismatches between the final release area and contents of release packages.

You can find these errors earlier in the release life cycle by manually executing the test area function against any release area.

These are some of the conditions that are detected by the test area function.

- A component is in multiple attached packages. Only one version can be installed with a release, so all but one version are invalid.

- A component is in only one attached package, but the version in the package is different from the version in the tested area.

- An attached package contains a component that is not checked in to the tested area.

- An attached package contains no components, no utility requests (scratch or rename), and no Online Forms, so it is extraneous to the release.

Follow these steps to test a release area.

1 Follow these steps to access the release area that you want to test.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                         Release List                    Row 1 to 2 of 2
Command ===>                                                     Scroll ===> CSR

   Release  Sta  Install  Work request       Dept      Aud  Creator  Pkgs
   FIN6410  DEV  20160328  WR 9010            FINANCE        USER015  00001
   FIN6430  DEV  20160328  WR 9030            FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

    d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to test. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                   FIN6430 Release Area List             Row 1 to 3 of 3
Command ===>                                                     Scroll ===> CSR

      Area                    Status               Area  Prior     Next
     Name    Type   Aud  BLK  CIA  COA  CIR  COR   step  area      area
 __  ACCTPAY SUBSYS 00   N    N    N    Y    N     0001            FINANCE
 __  GENLEDGR SUBSYS     N    N    N    N    N     0002            FINANCE
 __  FINANCE SYSTEM      N    N    N    N    N     0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2 On the *release* **Release Area List** panel, type **TA** in the line command of the area that you want to test and press **Enter**. The next panel allows a filter by package name to include or exclude:

```
CMNRMTPK                  Release Area Test Packages
Command ===>

Release: FIN6430
Area   : ACCTPAY

Package Name . . . . . . _____        (Blank, Full name or mask)
Include Only or Exclude  I              (I-Include Only X-Exclude)
```

Press Enter to continue, and ERO compares the contents of the release area to the contents of packages attached to the release. If errors are found, the **Release Install Components Disallowed** panel is displayed.

```
CMNTST03                  Components Disallowed              Components Failed
Command ===> _____   Scroll ===> CSR

  Component        Type Package  Sta User    Orig. pkg  User        Reason
  ACPSRCEE         SRC ACTP000032 D USER015                    NOT CHECKED IN
  ACPSRCEE         LOD ACTP000032 D USER015                    NOT CHECKED IN
  ACPSRCEE         LST ACTP000032 D USER015                    NOT CHECKED IN
  ACTCOB01         SRC ACTP000032 D USER015                    NOT CHECKED IN
  ACTCPY01         CPY ACTP000032 D USER015                    NOT CHECKED IN
  ACTCPY02         CPY ACTP000032 D USER015                    NOT CHECKED IN
  COB001           SRC ACTP000032 D USER015                    NOT CHECKED IN
  COB001           LOD ACTP000032 D USER015                    NOT CHECKED IN
  COB001           LST ACTP000032 D USER015                    NOT CHECKED IN
  CPY001           CPY ACTP000032 D USER015                    NOT CHECKED IN
***************************** Bottom of Data ********************************
...
+------------------------------------------------------------------------------+
| CMR1506I - Release FIN6430 area ACCTPAY and package components do not match. |
+------------------------------------------------------------------------------+
```

This panel displays the results of the area test. Only components that fail the test are displayed together with the reason for the failure. The TSO ID of the developers who staged the component in the tested package and the developer who checked the component in to the tested area is provided to help you resolve the problem.

This table describes the fields on the **Release Install Components Disallowed** panel.

Field	Description	
Component	The name of the component that fails the test area.	
Type	The library type of the failed component.	
Package	The package where the failed component was staged.	
User	The TSO ID of the developer who staged the failed component.	
Orig. pkg	The package from which the failed component was checked in to the release subsystem area and ultimately into the area being tested.	
User	The TSO ID of the developer checked in the failed component into the area being tested.	
Reason	FROM DIFF PKGE	The component is in two attached packages, the tested package and the originating package. The component in the originating package is the one that is checked in to the tested area.
	DIFF VERSIONS	The component is in only one attached package, but the version in the package is different from the version in the tested area.
	EMPTY RLS PKGE	The tested package contains no components., no utility requests (scratch or rename), and no Online Forms.
	NOT CHECKED IN	The component is in only one attached package, but it is not checked in to the tested area.

3 To resolve test area exceptions manually, take these actions:

- FROM DIFF PKGE: Verify that you have the correct version checked in to the tested area and that differences between all versions are reconciled in the component in the tested area. Then, retrieve from all areas the version that you do not want installed, and delete that version from its package.

- DIFF VERSIONS: Check-in the latest version from the tested package.

- EMPTY RLS PKGE: Detach the package from the release.

- NOT CHECKED IN: Delete the component from the tested package or check it in to the release and tested area.

If you are running test area in the final release area, you may be able to use automatic cleanup. See .

4 When an area is tested and no errors are found, the *release* **Release Area List** panel is displayed with the short message "Components Passed".

```
CMNRMALF                    FIN6430 Release Area List          Components Passed
Command ===>                                                   Scroll ===> CSR

      Area                       Status              Area   Prior      Next
    Name      Type   Aud  BLK  CIA  COA  CIR  COR   step   area       area
    ACCTPAY   SUBSYS  00   N    N    N    Y    N    0001              FINANCE
    GENLEDGR  SUBSYS       N    N    N    N    N    0002              FINANCE
    FINANCE   SYSTEM       N    N    N    N    N    0003   GENLEDGR
******************************* Bottom of data ********************************
```

5 Test area is complete.

Automatic Cleanup

When you run test area in the final area of a release, test area can automatically resolve many of the mismatches between the contents of the final area and the packages attached to the release.

Automatic cleanup is an alternative to manual procedures, which involve retrieving package components from release areas, reverting attached packages, deleting package components not needed in the release, running package audit, freezing the packages, and obtaining package approvals for a second time.

The automated cleanup of the test area function is especially attractive to ERO customers who have large releases that cross organizational boundaries.

⚠️ **CAUTION!** Use automatic cleanup with caution. Query the tested package and browse the component before you let automatic cleanup delete the component. Make sure the component in the tested area is the version you want to install with the release.

Automated cleanup of test area follows these rules.

- Automatic cleanup of test area exceptions is enabled by your release manager who sets indicators in the release definition that determine what attached packages can be automatically cleaned up:

  • No packages,

  • Packages in DEV status, and/or

  • Packages in FRZ status, and/or

- Packages in APR status.

■ Automatic cleanup can resolve these test area exceptions:

- NOT CHECKED IN

- FROM DIFF PKGE

- EMPTY PACKAGE

■ Automatic cleanup cannot resolve this test area exception:

- DIFF VERSIONS

  When a version of a component in a package is different from the version in the tested area, you must manually reconcile the differences. You can check in the package version into the final area, or you can check out from the final area and stage the new version of the component in the package.

■ When automatic cleanup is enabled, you can select which test exceptions in your area you want processed automatically.

■ A package component is not deleted if the corresponding area component is promoted.

■ Automatic cleanup cannot delete a component from a tested package if the corresponding component in the tested area was checked in through a different starting area.

■ An empty package is one with no components in staging libraries, no utility requests (scratch or rename), and no Online Forms.

■ All versions of a component in the release packages that are different from the version in the final area are reported by the Test Area function. You select which ones you want to be automatically deleted from their packages.

■ Normal ChangeMan ZMF security requirements apply to automatic cleanup.

- You must have update access to the application mnemonic to execute automatic cleanup for packages in the application.

- You cannot cleanup components locked by another TSO ID.

- You must have authorized access to components protected by component level security to automatically cleanup the components.

  Release managers can execute automatic cleanup to update packages in applications to which they do not have UPDATE authority.

If automatic cleanup is not enabled in the release definition for any package status, test area exceptions are displayed on the **Release Install Components Disallowed** panel, where no automatic cleanup options are offered.

If automatic cleanup is enabled for packages in DEV, FRZ, or APR status, test area exceptions in the final release area are displayed on the **Release Package Components Clean-up** panel.

```
CMNTST53  RELEASE PACKAGE Component Clean-up              Components Failed
Command ===> _____    Scroll ===> CSR

  Component        Type  Package Sta  User   Orig. pkg  User       Reason
_ ACPJCL10         JCL ACTP000038 D USER239                     NOT CHECKED IN
_ ACPPRC10         PRC ACTP000038 D USER240                     NOT CHECKED IN
_ ACPCTC10         CTC ACTP000039 D USER239  ACTP000039 USER239 DIFF VERSIONS
_ ACPPRC10         PRC ACTP000039 D USER239                     NOT CHECKED IN
_                      ACTP000055 D                             EMPTY PACKAGE
****************************** Bottom of Data ******************************
```

This table describes the fields on the **Release Package Components Clean-up** panel.

Field	Description	
Command	Type a command, or leave Command blank to type a Line Command on a component.	
	CANCEL	Cancel panel without update. (Abbreviation: C)
	LOCATE *component*	Locate a component. (Abbreviation: L)
	SETALL	Sets all line commands to S to select all listed components.
	SETOFF	Sets all line commands to blank to deselect all selected components.
Line Command	Type S to select a component for automatic cleanup.	
Component	The name of the component that fails the test area.	
Type	The library type of the failed component.	
Package	The package where the failed component was staged.	
Sta	The status (D, F, or A) of the package where the failed component resides.	
User	The TSO ID of the developer who staged the failed component.	
Orig. pkg	The package from which the failed component was checked in to the release subsystem area and ultimately into the final area being tested.	
User	The TSO ID of the developer checked in the failed component into the final area being tested.	
Reason	FROM DIFF PKGE	The component is in two attached packages, the tested package and the originating package. The component in the originating package is the one that is checked in to the tested area.
	DIFF VERSIONS	The component is in only one attached package, but the version in the package is different from the version in the tested area.
	EMPTY RLS PKGE	The tested package contains no components., no utility requests (scratch or rename), and no Online Forms.
	NOT CHECKED IN	The component is in only one attached package, but it is not checked in to the tested area.

Select components for automatic cleanup by typing **S** in the line command for a component, or type **SETALL** in the Command field and press **Enter** to select all eligible components for cleanup. Press **Enter** to process your selections.

If the component you select for automatic cleanup is in a package with a status for which automatic cleanup is not enabled, short ISPF message **Invalid Status** is displayed. If the component you select for automatic cleanup is in a package with a status for which automatic cleanup is enabled, these are the actions that are taken online.

- FROM DIFF PKGE: Delete the component from the package that was not the originating package for the version in the final area.

- NOT CHECKED IN: Delete the component from the tested package.

- EMPTY RLS PKGE: Detach the package from the release.

When you execute test area again, the exceptions are resolved.

```
CMNTST53  RELEASE PACKAGE Component Clean-up           Row  000001 Of  000001
Command ===> _____ Scroll ===> CSR

  Component          Type Package  Sta User    Orig. pkg  User       Reason
_ ACPCTC10           CTC ACTP000039 D USER239  ACTP000039 USER239  DIFF VERSIONS
 ***************************** Bottom of Data ********************************
```

Blocking an Area

Blocking an area locks the area down to prevent further changes to area components. When an area is blocked, you cannot check-in components to the area.

Blocking an area also adds associated check-off approvers from the Global Release Management Approver List where conditions specified in the global definition are met in the area.

The blocking rule for an area determines whether audit is required before the area can be blocked. The area blocking rule can also restrict who can block the area.

Other area rules can make release area functions contingent on the block status of an area. The retrieve rule for an area can be set to prohibit retrieve from an area that is blocked. The area check-in rule can require that an area be blocked before it can be checked in to the next area.

All areas must be blocked before a release can be blocked.

Follow these steps to block a release area.

1 Follow these steps to access the release area that you want to block.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                   Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
***************************** Bottom of data *****************************
```

    The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

    d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to block. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                   FIN6410 Release Area List          Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

       Area                   Status                 Area  Prior     Next
    Name      Type   Aud  BLK  CIA  COA  CIR  COR    step  area      area
__  ACCTPAY   SUBSYS 00   N    N    N    N    N      0001            FINANCE
__  GENLEDGR  SUBSYS      N    N    N    N    N      0002            FINANCE
__  FINANCE   SYSTEM      N    N    N    N    N      0003  GENLEDGR
***************************** Bottom of data *****************************
```

    The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

    The fields on *release* **Release Area List** panel are described on page 156.

2 On the *release* **Release Area List** panel, type **BK** in the line command of the area that you want to block. Press **Enter** and the *release* **Release Area List** panel is displayed with the updated **BLK** status field.

```
 CMNRMALF                   FIN6410 Release Area List           Area Blocked
Command ===> _____ Scroll ===> CSR

       Area                   Status                 Area  Prior     Next
    Name      Type   Aud  BLK  CIA  COA  CIR  COR    step  area      area
__  ACCTPAY   SUBSYS 00   N    N    N    N    N      0001            FINANCE
__  GENLEDGR  SUBSYS      N    N    N    N    N      0002            FINANCE
__  FINANCE   SYSTEM      N    N    N    N    N      0003  GENLEDGR
***************************** Bottom of data *****************************
...
+---------------------------------------------------------------------------+
| CMR1502I - Release FIN6410 Area ACCTPAY has been successfully blocked. |
+---------------------------------------------------------------------------+
```

3 Area block is complete.

Unblocking an Area

Unblocking an area unlocks the area for further changes to area components. Unblocking an area also clears any check-off approvals entered up to that point.

The area blocking rule can restrict who can unblock the area.

Follow these steps to unblock a release area.

1   Follow these steps to access the release area that you want to unblock.

    a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c   The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                  Row 1 to 2 of 2
Command ===> _____        Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
***************************** Bottom of data *****************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

    d   On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to unblock. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                   FIN6410 Release Area List            Row 1 to 3 of 3
Command ===> _____        Scroll ===> CSR

      Area                      Status              Area  Prior     Next
    Name     Type    Aud  BLK  CIA  COA  CIR  COR   step  area      area
__  ACCTPAY  SUBSYS  00   N    N    N    N    N     0001            FINANCE
__  GENLEDGR SUBSYS       N    N    N    N    N     0002            FINANCE
__  FINANCE  SYSTEM       N    N    N    N    N     0003  GENLEDGR
***************************** Bottom of data *****************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2   On the *release* **Release Area List** panel, type **UB** in the line command of the area that you want to unblock. Press **Enter** and the *release* **Release Area List** panel is displayed with the updated **BLK** status field.

```
CMNRMALF                   FIN6410 Release Area List            Area Unblocked
Command ===> _____        Scroll ===> CSR

      Area                      Status              Area  Prior     Next
    Name     Type    Aud  BLK  CIA  COA  CIR  COR   step  area      area
    ACCTPAY  SUBSYS  00   N    N    N    N    N     0001            FINANCE
    GENLEDGR SUBSYS       N    N    N    N    N     0002            FINANCE
    FINANCE  SYSTEM       N    N    N    N    N     0003  GENLEDGR
***************************** Bottom of data *****************************
...
+------------------------------------------------------------------------+
| CMR4501I - Release FIN6410 Area ACCTPAY has been successfully unblocked. |
+------------------------------------------------------------------------+
```

3   Area unblock is complete.

Notifying Area Check-off Approvers

Check-off approval signifies that an area is ready for check-in to the next area.

Check-off approval notification starts the check-off approval process. Check-off approvals cannot be entered until the check-off approval notification function is executed, even if there are no notifications defined for any of the approvers.

An area must be blocked to notify check-off approvers.

If the approval rule for an area is set to require check-off approval, and there are no check-off approvers defined for the area, execution of the check-off approval notification function will set the check-off approval flag to Y.

Follow these steps to notify check-off approvers.

1   Follow these steps to access the area in which you want to notify check-off approvers.

a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

c   The **Release List** panel is displayed.

```
CMNRMRLF                       Release List                    Row 1 to 2 of 2
Command ===> _____        Scroll ===> CSR

    Release   Sta  Install   Work request      Dept     Aud  Creator  Pkgs
__  FIN6410   DEV  20160328  WR 9010           FINANCE       USER015  00001
__  FIN6430   DEV  20160328  WR 9030           FINANCE       USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

d   On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to approve for check-off. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                  FIN6410 Release Area List             Row 1 to 3 of 3
Command ===> _____        Scroll ===> CSR

       Area                    Status            Area  Prior    Next
     Name     Type   Aud  BLK  CIA  COA  CIR  COR  step  area     area
__   ACCTPAY  SUBSYS  00   N    N    N    N    N   0001           FINANCE
__   GENLEDGR SUBSYS       N    N    N    N    N   0002           FINANCE
__   FINANCE  SYSTEM       N    N    N    N    N   0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on page 156.

2 On the *release* **Release Area List** panel, type **NO** in the line command for the area you want to approve for check-off. Press **Enter**, and the notifications is sent to check-off approvers according to the approver order number.

```
CMR4600I - Change Man Release FIN6430 Area ACCTPAY Check-off awaits your approval.
CN(INTERNAL)
```

3 If you attempt to send notifications for an area that is not blocked, you will receive this error message:

```
CMNRMALF                    FIN6410 Release Area List          Invalid Status
...
        +-------------------------------------------------------+
        | CMR7001I - Release FIN6410 Area ACCTPAY is not blocked. |
        +-------------------------------------------------------+
```

4 When check-off notifications have been sent, you are returned to the *release* **Release Area List** panel, where a short ISPF message tells you that area approvers were notified.

```
CMNRMALF                    FIN6410 Release Area List   Area Approvers Notified
Command ===> _____ Scroll ===> CSR

      Area                      Status              Area  Prior       Next
      Name      Type   Aud  BLK  CIA  COA  CIR  COR  step  area        area
__    ACCTPAY   SUBSYS 00   N    N    N    N    N    0001              FINANCE
__    GENLEDGR  SUBSYS      N    N    N    N    N    0002              FINANCE
__    FINANCE   SYSTEM      N    N    N    N    N    0003  GENLEDGR
****************************** Bottom of data ******************************
```

5 Check-off approver notification is complete.

Approving Area Check-off

Check-off approval is an administrative function that grants permission to check-in the contents of area libraries to the next area.

The requirement for check-off approval is determined by the area approval rule. Check-off approvals cannot be entered until the check-off approval notification function is executed, even if there are no notifications defined for any of the approvers.

If a check-off approver rejects the area, you must unblock the area. All check-off approvals entered up to that point are cleared. When the approver's issue is resolved, you must block the area, initiate the check-off approver notification process, and then enter all check-off approvals again.

Follow these steps to approve an area for check-off.

1 Follow these steps to access the release area that you want to approve for check-off.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

        The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

    d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to approve for check-off. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                  FIN6410 Release Area List            Row 1 to 3 of 3
Command ===> _____  Scroll ===> CSR

      Area                    Status              Area   Prior     Next
   Name      Type   Aud  BLK  CIA  COA  CIR  COR  step   area      area
__ ACCTPAY   SUBSYS  00   N    N    N    N    N   0001             FINANCE
__ GENLEDGR  SUBSYS       N    N    N    N    N   0002             FINANCE
__ FINANCE   SYSTEM       N    N    N    N    N   0003   GENLEDGR
****************************** Bottom of data ******************************
```

        The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

        The fields on *release* **Release Area List** panel are described on page 156.

2 On the *release* **Release Area List** panel, type **AO** in the line command for the area you want to approve for check-off. Press **Enter**, and the **Area - *area* - Approval List** panel is displayed.

```
CMNRMALA               AREA - ACCTPAY - Approval List           Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

      Release: FIN6430         Status: DEV      Install date: 20161218

   Approver Description                         User      Status
   Entity Name                                 Date      Time     Order #
_  ACTP Application Lead Programmer
   ACTPLEAD                                                       0010
_  Data Center Operations
   OPS                                                            0025
****************************** Bottom of data ******************************
```

This panel shows all approvers who must approve the area before it may be checked in to the next area. The list includes check-off approvers added to the area when the area was created, and it includes associated check-off approvers that are dynamically added to the area because their associated conditions are satisfied by the contents of the area.

This table describes the fields on the **Area - *area* - Approval List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an approver. CANCEL — Cancel panel without update. (Abbreviation: C) LOCATE *approver* — Locate an approver. (Abbreviation: L) REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command to act on an approver. A — Approve the area for check-off L — Display approver notifications R — Reject the area for check-off X — Approver association
Release	Displays the release .
Status	Displays the release status.
Install date	Displays the release install From date specified in the release definition.
Approver Description	Displays the check-off approver description defined in the release area definition.
Entity Name	Displays the security entity for this approver defined in the global approver list.
User	Displays the userid of the approver after the approval or rejection is entered.
Status	Displays the status of the approval: Blank (not entered), APPROVED or REJECTED.
Date	Displays the date that the approval or rejection was entered.
Time	Displays the system time that the approval or rejection was entered.
Order #	Displays the approver order number. This number determines the notification sequence and the required approval sequence.

3 On the **Area - *area* - Approval List** panel, type **A** in the line command for an approver and press **Enter**.

> **NOTE** The same person can enter multiple approvals on the **Area - *area* - Approval List** panel. However, if the approver order number is different for the approvers, you must leave the panel between approvals. Press **PF3** on the **Area - *area* - Approval List** panel, type **AO** in the line command for the area on the *release* **Release Area List** panel, and then press **Enter** to return to the **Area - *area* - Approval List** panel to enter more check-off approvals.

The **Area -** *area* **- Approval List** panel is updated with approval information, and notification is sent to approvers with the next higher check-off approver order number.

```
CMNRMALA                 AREA - ACCTPAY - Approval List          Area Approved
Command ===> _____          Scroll ===> CSR

        Release: FIN6430           Status: DEV      Install date: 20161218

  Approver Description                          User      Status
  Entity Name                                   Date      Time     Order #
_ ACTP Application Lead Programmer
  ACTPLEAD                                                         0010
_ Data Center Operations
  OPS                                                              0025
****************************** Bottom of data ******************************
```

4   Press **PF3** to return to the *release* **Release Area List** panel. Area check-off approval is complete when all approvers have entered their approval or when one approver enters a rejection. If all approvers have approved an area for check-off, the ***release* Release Area List** panel displays **Y** in the COA (Check-off Approval) column.

```
CMNRMALF                   FIN6410 Release Area List              Area Approved
Command ===> _____          Scroll ===> CSR

      Area                        Status              Area   Prior    Next
    Name     Type    Aud  BLK  CIA  COA  CIR  COR   step   area     area
___ ACCTPAY  SUBSYS  00    N    N    N    N    N    0001            FINANCE
___ GENLEDGR SUBSYS        N    N    N    N    N    0002            FINANCE
___ FINANCE  SYSTEM        N    N    N    N    N    0003   GENLEDGR
****************************** Bottom of data ******************************
```

5   Press **PF3** to return to the **Release List** panel.

Rejecting Area Check-off

Check-off approvers can reject an area for check-off, denying permission to check-in the contents of area libraries to the next area.

The requirement for check-off approval is determined by the area approval rule. Check-off approvals cannot be entered until the check-off approval notification function is executed, even if there are off notifications defined for any of the approvers.

If a check-off approver rejects the area, you must unblock the area. All check-off approvals entered up to that point are cleared. You must initiate the check-off approver notification process, and then enter all check-off approvals again.

Follow these steps to reject an area for check-off.

1   Follow these steps to access the release area that you want to reject for check-off.

    a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

c The **Release List** panel is displayed.

```
CMNRMRLF                         Release List                    Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328 WR 9010           FINANCE        USER015  00001
__ FIN6430  DEV  20160328 WR 9030           FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

d On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to reject for check-off. The *release* **Release Area List** panel is displayed.

```
CMNRMALF                   FIN6410 Release Area List             Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

      Area                    Status              Area  Prior     Next
   Name     Type    Aud  BLK  CIA COA CIR COR   step  area      area
__ ACCTPAY  SUBSYS  00   N    N   N   N   N     0001            FINANCE
__ GENLEDGR SUBSYS       N    N   N   N   N     0002            FINANCE
__ FINANCE  SYSTEM       N    N   N   N   N     0003  GENLEDGR
****************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2 On the *release* **Release Area List** panel, type **AO** in the line command for the area you want to reject for check-off. Press **Enter**, and the **Area - *area* - Approval List** panel is displayed.

```
CMNRMALA              AREA - ACCTPAY - Approval List          Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

      Release: FIN6430          Status: DEV      Install Date: 20161218

   Approver Description                        User      Status
   Entity Name                                 Date      Time    Order #
_  ACTP Application Lead Programmer
   ACTPLEAD                                                      0010
_  Data Center Operations
   OPS                                                           0025
****************************** Bottom of data ******************************
```

This panel shows all approvers who must approve the area before it may be checked in to the next area. The list includes check-off approvers added to the area when the area was created, and it includes associated check-off approvers that are dynamically added to the area because their associated conditions are satisfied by the contents of the area.

This table describes the fields on the **Area - *area* - Approval List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command to act on an Approver.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *approver* — Locate an approver. (Abbreviation: L)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command to act on an approver.
	A — Approve the area for check-off
	R — Reject the area for check-off
	L — Display approver notifications
	X — Approver association
Release	Displays the release .
Status	Displays the release status.
Install date	Displays the release install From date specified in the release definition.
Approver Description	Displays the check-off approver description defined in the release area definition.
Entity Name	Displays the security entity for this approver defined in the global approver list.
User	Displays the userid of the approver after the approval or rejection is entered.
Status	Displays the status of the approval: Blank (not entered), APPROVED or REJECTED.
Date	Displays the date that the approval or rejection was entered.
Time	Displays the system time that the approval or rejection was entered.
Order #	Displays the approver order number. This number determines the notification sequence and the required approval sequence.

3 On the **Area - *area* - Approval List** panel, type **R** in a line command for an approver and press **Enter**.

> **NOTE** The same person can enter multiple approvals on the **Area - *area* - Approval List** panel. However, if the approver order number is different for the approvers, you must leave the panel between approvals. Press **PF3** on the **Area - *area* - Approval List** panel, type **AO** in the line command for the area on the ***release* Release Area List** panel, and then press **Enter** to return to the **Area - *area* - Approval List** panel to enter more check-off approvals.

The **Reject Reasons** panel is displayed.

```
CMNRMARJ                      Reject Reasons
Command ===> _____


       Release: FIN6430        Status: DEV     Install Date: 20161218
       Area:    ACCTPAY
    Area check-off approval rejected on because the consolidation
    report for this area is incomplete.
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
```

If you rejected this area previously, the reject reasons you entered before are displayed. Reject reasons entered for each area approver entity, except associated approvers, are retained unless you manually erase or overtype the reject reasons when rejecting an area again.

4   Type your reasons for rejecting the area on the **Reject Reasons** panel, and press **Enter**. You are returned to the **Area - *area* - Approval List** panel, which is updated with rejection information. Notification of the rejection is sent to approvers with the next higher check-off approver order number.

```
CMNRMALA              AREA - ACCTPAY - Approval List       Area Rejected
COMMAND ===> _____ SCROLL ===> CSR

      Release ID: FIN6430         STATUS: DEV       INSTALL DATE: 20101218

   Approver Description                           ID       Status
   Entity Name                                    Date     Time    Order #
_  ACTP Application Lead Programmer               USER239  REJECTED
   ACTPLEAD                                       20160209 125610  0010
_  Data Center Operations
   OPS                                                             0025
****************************** Bottom of data ******************************
```

5   Press **PF3** to return to the *release* **Release Area List** panel. Area check-off approval is complete when all approvers have entered their approval or when one approver enters a rejection. If an approver has rejected an area for check-off, the **release Release Area List** panel displays Y in the COR (Check-off Reject) column.

```
CMNRMALF               FIN6430 RELEASE AREA LIST             Area Rejected
Command ===> _____ Scroll ===> CSR

      Area                    Status            Area    Prior     Next
    Name      Type   Aud  BLK  CIA  COA  CIR  COR  Step    Area      Area
__  ACCTPAY   SUBSYS 00   Y    Y    N    N    Y    0001              FINANCE
__  GENLEDGR  SUBSYS      N    Y    N    N    N    0002              FINANCE
__  FINANCE   SYSTEM      N    Y    N    N    N    0003    ACCTPAY
****************************** Bottom of data ******************************
```

6   Press **PF3** to return to the **Release List** panel.

Testing a Release

The ERO test release function executes the test area function against the final area of a release. You cannot block a release until all discrepancies between the final area and packages attached to the release are resolved.

If automatic cleanup is enabled in the release definition, then automatic cleanup is executed in test release the same as it is in test area.

Follow these steps to execute the test release function.

1   Follow these steps to access the release that you want to test.

a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter**.

b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

c   The **Release List** panel is displayed.

```
CMNRMRLF                          Release List                   Row 1 to 2 of 2
Command ===> _____   Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE       USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE       USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

2   On the **Release List** panel, type **TR** in the line command for the release you want to test. Press **Enter** to process your request.

3   See "Testing an Area" on page 179 for a description of the test area process. That section contains topic "Automatic Cleanup" on page 182, which describes the automatic cleanup feature of test area.

4   When a release is tested and no errors are found, the **Release List** panel is displayed with the short message "Components Passed".

```
CMNRMRLF                          Release List               Components Passed
Command ===> _____   Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE       USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE       USER015  00003
****************************** Bottom of data ******************************
```

Blocking a Release

Blocking a release locks down the release and its areas in preparation for install. All areas in a release must be blocked before a release can be blocked, and all packages attached to the release must be approved.

Blocking a release also adds associated install approvers from the Global Release Management Approver List where conditions specified in the global definition are met in the release

When you attempt to block a release, ERO validates the release and the contents of the final release area. (Release components are installed from final area libraries.) Final area contents are validated by an internal execution of the test release function.

> **NOTE** You can test for problems with area components earlier in the release life cycle. See "Testing an Area" on page 179 and "Testing a Release" on page 196.

Other release conditions are tested to detect errors, including:

- Install date of attached package outside of the release install date range.

- Attached package not in APR status.

If the release validation detects no errors, notification is sent to the approvers with the lowest install approver order number, and the release is blocked.

Follow these steps to block a release.

1 Follow these steps to access the release that you want to block.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                          Release List                    Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

    The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

2 On the **Release List** panel, type **BK** in the line command for the release you want to block. Press **Enter** to process your request.

If the release validations detects errors, a short message is displayed in the upper right corner of the **Release List** panel. Press **PF1** to see a long message that provides more information about the error.

```
CMNRMRLF                      Release List               Areas Unblocked
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE       USER015  00001
BK FIN6430  DEV  20160328  WR 9030          FINANCE       USER015  00003
***************************** Bottom of data *****************************

...
         +------------------------------------------------------------+
         | CMR7029I - Area ACCTPAY is not blocked in Release FIN6430. |
         +------------------------------------------------------------+
```

NOTE If the short message "Components Failed" is displayed, type **TR** in the line command of the release to execute the Test Release function. Details about the errors are displayed on the **Release Install Components Disallowed** panel. See "Testing a Release" on page 196 for a description of the Test Release function and the errors it diagnoses.

3 When the release passes the validation, release install approver notifications are issued to the approvers with the lowest install approver order number.

```
CMR4600I - Change Man Release FIN6430 awaits your approval. CN(INTERNAL)
```

4 Press **Enter** to see the **Release List** panel, which shows an updated status for the blocked release.

```
CMNRMRLF                      Release List               Release Blocked
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE       USER015  00001
__ FIN6430  BLK  20160328  WR 9030          FINANCE       USER015  00003
***************************** Bottom of data *****************************
```

5 Block release initiates the install JCL file tailoring process for each release package. When the file tailoring server finishes building install JCL, a message is sent to the creator of each release package.

```
 CMN8700I - COMM000008 Installation JCL Build service completed CN(INTERNAL)
 CMN8700I - ACTP000039 Installation JCL Build service completed CN(INTERNAL)
 CMN8700I - ACTP000038 Installation JCL Build service completed CN(INTERNAL)
 CMN8700I - GENL000005 Installation JCL Build service completed CN(INTERNAL)
 ***
```

NOTE You cannot enter a release approval until the file tailoring for install JCL is completed and you have received a "JCL Build service completed" message for every package in the release.

6 Block release is complete.

Unblocking a Release

Unblocking a release unlocks the release for further changes. Unblocking a release does not unblock the areas in the release. You must unblock release areas to change release components.

If a release is unblocked, all approvals entered up to that point are cleared, and they must be entered again after the release is blocked.

Follow these steps to unblock a release.

1   Follow these steps to access the release that you want to unblock.

    a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c   The **Release List** panel is displayed.

```
CMNRMRLF                          Release List                 Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  BLK  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

2   On the **Release List** panel, type **UB** in the line command for the release you want to unblock. Press **Enter** to process your request. The **Release List** panel is displayed to show an updated status for the unblocked release.

```
CMNRMRLF                          Release List              Release Unblocked
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

3   Unblock release is complete.

Approving a Release

After a release is blocked, all install approvers must enter their approvals before the release will install.

If a release is unblocked, all approvals entered up to that point are cleared, and they must be entered again after the release is blocked. If an approver rejects the release, the release must be reverted to clear the rejection, and all install approvals must be entered again.

Follow these steps to approve a release for install.

1 Follow these steps to access the release that you want to approve.

  a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

  b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

  c The **Release List** panel is displayed.

```
CMNRMRLF                       Release List                  Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request    Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328 WR 9010         FINANCE        USER015  00001
__ FIN6430  BLK  20160328 WR 9030         FINANCE        USER015  00003
***************************** Bottom of data *****************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

2 On the **Release List** panel, type **AP** in the line command for the release you want to approve. Press **Enter**, and the **Release Install Approver List** panel is displayed.

```
CMNRMRLA              Release Install Approval List       Row 1 to 3 of 3
Command ===> _____  SCROLL ===> CSR

   Release: FIN6430            Status: BLK      Install: 20101218

   Approver description                        User     Status
   Entity                                      Date     Time    Order #
__ Systems Development Manager
   SYSDVMGR                                                     0031
__ Financial Accounting Manager
   FINACCTG                                                     0032
__ Release Manager
   RLSEMNGR                                                     0033
***************************** Bottom of data *****************************
```

This panel shows all approvers who must approve the release before it may be installed. The list includes install approvers added to the release when the release was created, and it includes associated install approvers that are dynamically added to the release because their associated conditions are satisfied by the contents of the release.

This table describes the fields on the **Release Install Approver List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an approver. CANCEL Cancel panel without update. (Abbreviation: C) LOCATE *approver* Locate an approver. (Abbreviation: L) REFRESH Refresh the panel display from the VSAM files. (Abbreviation: R)

Field	Description
Line Command	Type a line command to act on an approver.
	A Approve the release
	R Reject the release
	L Display approver notifications
	X Approver association
Release	Displays the release .
Status	Displays the release status.
Install	Displays the release install From date specified in the release definition.
Approver description	Displays the release install approver description defined in the global approver list.
Entity	Displays the security entity for this approver defined in the global approver list.
User	Displays the userid of the approver after the approval or rejection is entered.
Status	Displays the status of the approval: Blank (not entered), APPROVED or REJECTED.
Date	Displays the date that the approval or rejection was entered.
Time	Displays the system time that the approval or rejection was entered.
Order #	Displays the approver order number. This number determines the notification sequence and the required approval sequence.

> **NOTE** The same person can enter multiple approvals on the **Release Install Approver List** panel. However, if the approver order number is different for the approvers, you must leave the panel between approvals. Press **PF3** on the **Release Install Approver List** panel, type **AR** in the line command for the release on the **Release List** panel, and then press **Enter** to return to the **Release Install Approver List** panel to enter more approvals.

On the **Release Install Approver List** panel, type **A** on a line command for an approver and press **Enter**. The **Release Install Approver List** panel is updated with approval information.

```
CMNRMRLA                  Release Install Approval List       Release Approved
Command ===> _____        SCROLL ===> CSR

    Release: FIN6430              Status: BLK       Install: 20101218

    Approver description                           User      Status
    Entity                                         Date      Time    Order #
__  Systems Development Manager                    USER017   APPROVED
    SYSDVMGR                                       20160303  18552   0031
__  Financial Accounting Manager
    FINACCTG                                                         0032
__  Release Manager
    RLSEMNGR                                                         0033
****************************** Bottom of data ******************************
```

When all approvals with the same **Order #** are entered, notification is sent to approvers with the next higher order number.

3 When all approvals have been entered, the **Release List** panel shows the new release status of APR.

```
CMNRMRLF                       Release List               Release Approved
Command ===> _____     Scroll ===> CSR

   Release  Sta  Install  Work request     Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328 WR 9010          FINANCE        USER015  00001
__ FIN6430  APR  20160328 WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

4 Release approval is complete.

Distribution to Production Instances

If packages in your release are scheduled to install at ChangeMan DP or P instances, distribution occurs after the final release approval is entered.

SEND messages are broadcast to package creators telling them distribution jobs have been submitted and notifying them about the success or failure of distribution.

```
 Job ACTP1038(J0842216) submitted CN(INTERNAL)
 Job ACTP1039(J0842214) submitted CN(INTERNAL)
 Job GENL1005(J0842217) submitted CN(INTERNAL)
 Job COMM1008(J0842215) submitted CN(INTERNAL)
 Job ACTP1038(J0842219) submitted CN(INTERNAL)
 Job COMM1008(J0842222) submitted CN(INTERNAL)
 Job ACTP1039(J0842220) submitted CN(INTERNAL)
 Job GENL1005(J0842221) submitted CN(INTERNAL)
 Job COMM1008(J0842230) submitted CN(INTERNAL)
 Job ACTP1038(J0842229) submitted CN(INTERNAL)
 Job GENL1005(J0842232) submitted CN(INTERNAL)
 Job ACTP1039(J0842231) submitted CN(INTERNAL)
 ***
CMN403I - ACTP000039 DISTRIBUTED AT SERT4 2010/12/10 @ 08:19:54. CN(INTERNAL)
CMN403I - GENL000005 DISTRIBUTED AT SERT4 2010/12/10 @ 08:19:54. CN(INTERNAL)
CMN403I - COMM000008 DISTRIBUTED AT SERT4 2010/12/10 @ 08:20:02. CN(INTERNAL)
CMN403I - ACTP000038 DISTRIBUTED AT SERT4 2010/12/10 @ 08:20:21. CN(INTERNAL)
CMN403I - COMM000008 DISTRIBUTED AT SERT# 2010/12/10 @ 08:21:00. CN(INTERNAL)
CMN403I - ACTP000038 DISTRIBUTED AT SERT# 2010/12/10 @ 08:21:08. CN(INTERNAL)
CMN403I - GENL000005 DISTRIBUTED AT SERT# 2010/12/10 @ 08:21:23. CN(INTERNAL)
CMN403I - ACTP000038 DISTRIBUTED AT SERT5 2010/12/10 @ 08:21:44. CN(INTERNAL)
CMN403I - COMM000008 DISTRIBUTED AT SERT5 2010/12/10 @ 08:21:44. CN(INTERNAL)
CMN403I - ACTP000039 DISTRIBUTED AT SERT# 2010/12/10 @ 08:21:55. CN(INTERNAL)
CMN403I - GENL000005 DISTRIBUTED AT SERT5 2010/12/10 @ 08:22:04. CN(INTERNAL)
CMN403I - ACTP000039 DISTRIBUTED AT SERT5 2010/12/10 @ 08:22:16. CN(INTERNAL)
 ***
```

If you wait a few minutes for the distribution jobs to run, then type **REFRESH** on the command line of the **Release List** panel, you will see that the status of the release is changed to **DIS**.

```
CMNRMRLF                        Release List                 Release Approved
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request    Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328  WR 9010        FINANCE        USER015  00001
__ FIN6430  DIS  20160328  WR 9030        FINANCE        USER015  00003
****************************** Bottom of data *******************************
```

Follow these steps to verify that the status of each package in the release is changed to **DIS** status on the development ChangeMan ZMF instance.

1   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter**.

2   On the **Release List Specification Parameters**, type appropriate selection criteria and press **Enter**.

3   On the **Release List** panel, type **PK** in the line command for the release you approved and press **Enter**.

4   On the *release* **- Release Package List** panel, verify that the status of each release package is **DIS**.

```
CMNRMPLF            FIN6410 - Release Package List        Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

   Package      Sta  Area     Install DT/TM  Last Promotion    Aud Chkd In
__ ACTP000038  DIS  ACCTPAY  20160429 2359                     00       Y
__ ACTP000039  DIS  ACCTPAY  20160429 2359                     00       Y
__ COMM000008  DIS  ACCTPAY  20160429 2359                     00       Y
__ GENL000005  DIS  GENLEDGR 20160429 2359                     00       Y
****************************** Bottom of data *******************************
```

You can also follow these steps to verify that your release and the packages in the release are inserted in the ChangeMan ZMF production instances where the release will install.

1   Disconnect from the ChangeMan ZMF development instance and connect to the production instance.

2   Type **=3** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

3   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

4   On the **Release List** panel, verify that the status of the release that you approved is **DIS**, then type line command **PK** on the release row and press **Enter**.

5 On the *release* - **Release Package List** panel, verify that the status of each release package is **DIS**.

```
CMNRMPLF                 FIN6410 - Release Package List         Row 1 to 1 of 1
Command ===> _____   Scroll ===> CSR

    Package    Sta  Area      Install DT/TM  Last Promotion      Aud Chkd In
__  ACTP000038 DIS  ACCTPAY   20160429 2359                      00      Y
__  ACTP000039 DIS  ACCTPAY   20160429 2359                      00      Y
__  COMM000008 DIS  ACCTPAY   20160429 2359                      00      Y
__  GENL000005 DIS  GENLEDGR  20160429 2359                      00      Y
****************************** Bottom of data ******************************
```

Rejecting a Release

After a release is blocked, all install approvers must enter their approvals before the release will install. Approvers can prevent the installation of a blocked release by rejecting the release.

If an approver rejects the release, the release must be reverted to clear the rejection, and all install approvals must be entered again.

Follow these steps to reject a release.

1 Follow these steps to access the release that you want to reject.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel is displayed.

```
CMNRMRLF                          Release List               Release Approved
Command ===> _____   Scroll ===> CSR

    Release  Sta  Install  Work request    Dept     Aud  Creator  Pkgs
__  FIN6410  BAS  20160328  WR 9010         FINANCE       USER015  00001
__  FIN6430  BLK  20160328  WR 9030         FINANCE       USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

2 On the **Release List** panel, type **AP** in the line command for the release you want to approve. Press **Enter**, and the **Release Install Approver List** panel is displayed.

```
CMNRMRLA                  Release Install Approval List        Release Approved
Command ===>                                                  Scroll ===> CSR

   Release: FIN6430            Status: BLK        Install: 20101218

   Approver description                          User      Status
   Entity                                        Date      Time     Order #
__ Systems Development Manager_____ USER239   APPROVED
   SYSDVMGR                                       20160309  14132    0031
__ Financial Accounting Manager_____
   FINACCTG                                                          0032
__ Release Manager_____
   RLSEMNGR                                                          0033
****************************** Bottom of data********************************
```

This panel shows all approvers who must approve the release before it may be installed. The list includes install approvers added to the release when the release was created, and it includes associated install approvers that are dynamically added to the release because their associated conditions are satisfied by the contents of the release.

This table describes the fields on the **Release Install Approver List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an approver. CANCEL — Cancel panel without update. (Abbreviation: C) LOCATE *approver* — Locate an approver. (Abbreviation: L) REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: R)
Line Command	Type a line command to act on an approver. A — Approve the release R — Reject the release L — Display approver notifications X — Approver association
Release	Displays the release.
Status	Displays the release status.
Install	Displays the release install From date specified in the release definition.
Approver description	Displays the release install approver description defined in the global approver list.
Entity	Displays the security entity for this approver defined in the global approver list.
User	Displays the userid of the approver after the approval or rejection is entered.
Status	Displays the status of the approval: Blank (not entered), APPROVED or REJECTED.

Field	Description
Date	Displays the date that the approval or rejection was entered.
Time	Displays the system time that the approval or rejection was entered.
Order #	Displays the approver order number. This number determines the notification sequence and the required approval sequence.

NOTE The same person can enter multiple approvals on the **Release Install Approver List** panel. However, if the approver order number is different for the approvers, you must leave the panel between approvals. Press **PF3** on the **Release Install Approver List** panel, type **AR** in the line command for the release on the **Release List** panel, and then press **Enter** to return to the **Release Install Approver List** panel to enter more approvals.

3 On the **Release Install Approver List** panel, type **R** on the line command for an approver and press **Enter**. The **Reject Reasons** panel is displayed.

```
CMNRMRRJ                        REJECT REASONS
Command ===> _____

    Release: FIN6430          Status: BLK        Install: 20160218

  Risk to high for year end release.  Move non-critical projects into_____
  January release._____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
```

If you rejected this release previously, the reject reasons you entered before are displayed. Reject reasons entered for each install approver entity, except associated approvers, are retained unless you manually erase or overtype the reject reasons when rejecting a release again.

4 Type your reasons for rejecting the release on the **Reject Reasons** panel, and press **Enter**. You are returned to the **Release Install Approver List** panel, which is updated with rejection information. Notification of the rejection is sent to approvers with the next higher install approver order number.

```
CMNRMRLA                Release Install Approval List        Release Rejected
Command ===> _____ Scroll ===> CSR

    Release: FIN6430          Status: BLK        Install: 20101218

    Approver description                       User      Status
    Entity                                     Date      Time    Order #
__  Systems Development Manager_____   USER239   APPROVED
    SYSDVMGR                                   20160309  14132   0031
__  Financial Accounting Manager_____   USER207   REJECTED
    FINACCTG                                   20160309  14145   0032
__  Release Manager_____
    RLSEMNGR                                                     0033
***************************** Bottom of data*****************************
```

5 Press **PF3** to return to the **Release List** panel that shows the new release status of REJ.

```
CMNRMRLF                          Release List                    Row 1 to 2 of 2
Command ===> _____    Scroll ===> CSR

   Release   Sta  Install   Work request       Dept       Aud  Creator   Pkgs
__ FIN6410   BAS  20160328  WR 9010            FINANCE         USER015   00001
__ FIN6430   REJ  20160328  WR 9030            FINANCE         USER015   00003
****************************** Bottom of data ******************************
```

6 Reject release is complete.

Reverting a Release

Revert release clears all release install approvals, unblocks the release, and changes the status of the release from APR, REJ, DIS, or BAK to DEV status.

The status of release areas are not changed, and packages attached to the release are not automatically reverted.

If your release was distributed to one or more ChangeMan ZMF production instances, you can initiate revert release at the development instance and revert release at some or all production sites.

If you revert a release that is waiting to install, scheduling information for packages attached to the release is removed from the scheduler, so even if you do not revert the packages, they will not install. However, you must revert a package to change any package contents. See .

Follow these steps to revert a release:

NOTE This procedure describes reverting a release that will install at production ZMF instances. If you are working in an ALL environment, you will not see the panels for site selection, but the revert release process is essentially the same.

1 Follow these steps to access the release that you want to revert.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel (CMNRMRLF) is displayed.

```
CMNRMRLF                          Release List                    Row 1 to 2 of 2
Command ===> _____    Scroll ===> CSR

   Release   Sta  Install   Work request       Dept       Aud  Creator   Pkgs
__ FIN6410   BAS  20160328  WR 9010            FINANCE         USER015   00001
__ FIN6430   REJ  20160328  WR 9030            FINANCE         USER015   00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

Notice the **Sta** column, which displays the overall status of the release at the development instance.

2 On the **Release List** panel, type **RV** in the line command for the release you want to revert. Press **Enter**, and the **Revert: Site Information** panel is displayed.

```
CMNRMRRS                    Revert Site Information           Row 1 to 3 of 3
Command ===>                                              Scroll ===> CSR

   Release: FIN6430      Creator: USER239     Status: APR

   Site   Install          Contact                  Phone           Status
_ SERT#   20160318 0001    AGUSTO YEARWOOD          808-555-1212     N/S
_ SERT4   20160318 0001    AGUSTO YEARWOOD          808-555-1212     REJ
_ SERT5   20160318 0001    AGUSTO YEARWOOD          808-555-1212     N/S
****************************** Bottom of data ******************************
```

This panel displays all of the sites where packages attached to this release are scheduled for install.

NOTE The **Revert: Site Information** panel shows production instances where release packages were distributed. This panel also shows the development site. Revert release is a simple process of changing the release status at production sites and at the development site. There is no network of jobs that automatically reverts the development site when all production sites have been reverted.

Notice the **Status** column at the right of the panel, which is the status of the release at that site.

3 On the **Revert: Site Information** panel, select the installation site or sites where you want to revert your release, and press **Enter**. The *site* **- Revert Reasons** panel is displayed for the first selected site.

```
CMNRMRRV                    SERT4 - Revert Reasons
Command ===> _____

        Release: FIN6430        Status: REJ     Install: 20101218

        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
```

Type your reasons for reverting the release on the The *site - Revert Reasons* panel.

```
CMNRMRRV                    SERT4 - Revert Reasons
Command ===> _____

        Release: FIN6430          Status: REJ      Install: 20101218

    Release reverted to move non-critical projects from December release to
    January release_____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
```

4   When you are satisfied with the text you typed on the *site - Revert Reasons* panel, press **Enter**. If the site you selected for revert is a P instance, the **Submit Remote Revert Request** panel is displayed.

```
CMNRMRJC                   Submit Remote Revert Request
Command ===> _____

 Site: SERT@      Release: FIN6430      Creator: USER239     Status: DIS

Job Statement Information:
===> //USER01  JOB (XXXX,ZZZZ),'USER01 REVERT'_____
===> //         CLASS=A,MSGCLASS=X,NOTIFY=USER01,_____
===> //         MSGLEVEL=(1,1)_____
===> //*_____
```

Type job card information on the **Submit Remove Revert Request** panel, and press **Enter** to submit a service request job that connects to the production site through TCP/IP and initiates release revert at that site.

If you selected more than one site to revert, the *site - Revert Reasons* panel is displayed for the next selected site. This panel displays the revert reasons that you typed for the previous site.

Repeat the *site - Revert Reasons* step and the **Submit Remove Revert Request** step until service request jobs have been submitted for all of sites that you selected.

5   When the last installation site has been processed, you are returned to the **Revert: Site Information** panel.

```
CMNRMRRS                    Revert Site Information              Job Submitted
Command ===> _____  Scroll ===> CSR

Release: FIN6430      Creator: USER239     Status: APR

 Site      Install          Contact                    Phone          Status
_ SERT#    20101218 0001    AGUSTO YEARWOOD            808-555-1212    DIS
_ SERT4    20101218 0001    AGUSTO YEARWOOD            808-555-1212    DIS
_ SERT5    20101218 0001    AGUSTO YEARWOOD            808-555-1212    DIS
***************************** Bottom of data *****************************
```

6   Press **PF3** to return to the **Release List** panel. When all service request jobs are finished running to revert your release at all selected remote sites, you can type

Refresh in the Command line of the **Release List**, and the release you reverted shows an updated status of DEV.

```
CMNRMRLF                          Release List                    Release Reverted
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  BAS  20160328 WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328 WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

7   Revert release is complete.

You must revert attached packages in a reverted release to change components in those packages. See .

Installing a Release

Packages attached to a release are distributed when all release approvals are entered and the release status is changed to APR.

Each package attached to a release is installed according to the package **Scheduler** and **Install Date/Time**.

- If the package scheduler is **MANUAL**, the package installation process is initiated immediately after the final release approval is entered.

- If the package scheduler is **CMN**, the package is inserted into the ChangeMan ZMF scheduler, and the package installation process is initiated by the scheduler when the specified install date/time arrives.

- If the package scheduler is **OTHER**, the CMN17 job is submitted after the last release approval is entered, and that job enters the first package install job into your external job scheduler.

Although release components are installed on a package-by-package basis, the components are copied from final release area libraries rather than from package staging libraries.

When a release package is installed successfully at a production instance, the package status is there is changed to INS. When all release packages are successfully installed at a production instance, the release status there is changed to BAS.

When a release package is installed successfully at all production instances, and the baseline ripple at the development is successful, the package status in the development instance is changed to BAS.

When all packages attached to a release are baselined successfully in the development instance, the release status in the development instance is changed to BAS.

```
CMNRMRLF                        Release List                Release Reverted
Command ===> _____   Scroll ===> CSR_

   Release   Sta  Install   Work request      Dept      Aud  Creator  Pkgs
__ FIN6410   BAS  20160328  WR 9010           FINANCE        USER015  00001
__ FIN6430   BAS  20160328  WR 9030           FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

Backing Out a Release

Release backout backs out all baselined release packages, changes their status from BAS to BAK, and then changes the status of the release from BAS to BAK.

If your release was distributed to one or more ChangeMan ZMF production sites, you can initiate release backout at the development site and back out the release at some or all production sites.

When a release is backed out at a production site, all installed release packages at that site are backed out and their status is changed from INS to BAK. The status of the release at that site is changed from INS to BAK.

When backout for a distributed release is complete at all production sites, the release packages are backed out at the development site, and their status is changed from BAS to BAK. Then the status of the release at the development site is changed from BAS to BAK.

To return the release to DEV status, you must revert the release. See "Reverting a Release" on page 207. To return packages to DEV status, you must revert each release package. See "Reverting a Release Package" on page 280.

Follow these steps to back out the release at production instances and at the development instance where the release was created.

> **NOTE** This procedure describes backing out a release that is installed at production sites. If you are working in an ALL environment, you will not see the panels for site selection, but the backout release process is essentially the same.

1 Follow these steps to access the release that you want to back out.

  a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

  b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                         Release List                   Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request     Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  BAS  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

    The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel.

    Notice the **Sta** column, which displays the overall status of the release at the development instance.

2 On the **Release List** panel, type **BO** in the line command for the release you want to back out. Press **Enter** and the **Backout: Site Selection** panel is displayed.

```
CMNRMRBS                    Backout Site Information            Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

         Release: FIN6430     Creator: USER239    Status: BAS

    Site   Install          Contact                Phone          Status
_  SERT#   20160318 0800    AGUSTO YEARWOOD        800-555-1212    INS
_  SERT4   20160318 0800    AGUSTO YEARWOOD        800-555-1212    BAS
_  SERT5   20160318 0800    AGUSTO YEARWOOD        800-555-1212    INS
****************************** Bottom of data ******************************
```

    Notice the **Status** column at the right of the panel, which is the status of the release at the production instance.

3 Select the site or sites from which you want to back out the release. Press **Enter** and the *site* **- Backout Reasons** panel is displayed.

```
 CMNRMRBO                     SERT5 - Backout Reasons
 Command ===> _____

         Release: FIN6430        Status: BAS     Install: 20101218


      _____
      _____
      _____
      _____
      _____
      _____
      _____
      _____
      _____
      _____
      _____
```

4 Type your reasons for backing out the release on the *site* **- Backout Reasons** panel and press **Enter**. If the site you selected for backout is a P instance, the **Submit Remote Backout Request** panel is displayed.

```
CMNRMBJC                  Submit Remote Backout Request
Command ===> _____


Site: SERT5      Release: FIN6430     Creator: USER239    Status: INS


Job Statement Information:
  //USER239A JOB (ACCOUNT),'SERT5 JOB',_____
  //             CLASS=A,_____
  //             NOTIFY=USER239,_____
  //             MSGCLASS=Y_____
```

Modify the job card as required and press **Enter** to submit a service request job that connects to the production site through TCP/IP and initiates release backout at that site.

If you selected more than one site to back out, the *site* **- Backout Reasons** panel is displayed for the next selected site. This panel displays the backout reasons that you typed for the previous site.

Repeat the *site* **- Backout Reasons** step and the **Submit Remote Backout Request** step until service request jobs have been submitted for all of sites that you selected.

5 When you have submitted service request jobs for all of the sites that you selected, the **Backout: Site Selection** panel is displayed again.

```
CMNRMRBS                  Backout Site Information           Job Submitted
Command ===> _____    Scroll ===> CSR


        Release: FIN6430      Creator: USER239     Status: BAS


 Site     Install        Contact                   Phone           Status
_ SERT#    20101218 0800  AGUSTO YEARWOOD           800-555-1212     INS
_ SERT4    20101218 0800  AGUSTO YEARWOOD           800-555-1212     BAS
_ SERT5    20101218 0800  AGUSTO YEARWOOD           800-555-1212     INS
****************************** Bottom of data ********************************
```

If you wait until all package backout jobs for a site have run, then **Refresh** the **Backout Site Selection** panel, you can see the release status at a site change to from INS to BAK.

6 Press PF3 and you are returned to the **Release List** panel.

```
CMNRMRLF                      Release List              Row 1 to 2 of 2
Command ===> _____    Scroll ===> CSR


  Release    Sta  Install   Work request      Dept    Aud  Creator  Pkgs
__ FIN6410    BAS  20160328  WR 9010           FINANCE      USER015  00001
__ FIN6430    BAS  20160328  WR 9030           FINANCE      USER015  00003
***************************** Bottom of data *****************************
```

7   After the release status is changed to BAK at all production sites and you **Refresh** the **Release List** panel, you can see the status of the release is changed from BAS to BAK.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

    Release  Sta  Install  Work request      Dept       Aud  Creator  Pkgs
__  FIN6410  BAS  20160328  WR 9010          FINANCE         USER015  00001
__  FIN6430  BAK  20160328  WR 9030          FINANCE         USER015  00003
****************************** Bottom of data ******************************
```

8   Release backout is complete.

When a release and its attached packages are backed out, you must revert the release and the packages to DEV status to make changes and start the release install process over again.

See "Reverting a Release" on page 207 for the steps to revert a release to DEV status.

See "Reverting a Release Package" on page 280 for the steps to revert a release package to DEV status.

Query and Search Release Components

The query release components function provides four ways to list components in a release, and it provides two ways to search release components for occurrences of character strings.

Follow these steps to access the query component options for a release.

1   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

2   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

3   The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

    Release  Sta  Install  Work request      Dept       Aud  Creator  Pkgs
__  FIN6410  BAS  20160328  WR 9010          FINANCE         USER015  00001
__  FIN6430  BAK  20160328  WR 9030          FINANCE         USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that satisfy the selection criteria you typed on the **Release List Parameters** panel. The fields on **Release List** panel are described on page 59.

4 On the **Release List** panel, type line command **QC** on a release row to select the release that you want to query or search. The **Release Component Query Options** panel is displayed.

```
CMNRQC75               Release Component Query Options
Option ===> _____

   Release: FIN6430

1  In motion      Components in motion
2  List latest    Latest versions of component
3  Search latest  Search latest components for strings
4  List all       Consolidated list showing all versions
5  Search all     Search all components for strings
```

This panel lists three query options and two search options.

5 To see two more query options, type **1** on the **Option** line of the **Release Component Query Options** panel, then press **Enter**. The **Release Query Options** panel is displayed.

```
CMNRQC70                    Release Query Options
Option ===> _____

    Release: FIN6430

1  Release       Query components in all release areas
2  Release Parms Query component list selection criteria
```

The query and search release components options are described in the topics that follow.

Query Release Components

The two query release component options that are displayed on the **Release Query Options** panel and the two query release component options that are displayed on the **Release Component Query Options** panel are summarized in this table.

Description	Panel / Option
List components in a release.	Panel: **Release Query Options** panel (CMNRQC70) Option: 1 Release - Query components in all release areas See **Release Query Components In Motion** panel on page 217.
Filter a list of components in a release.	Panel: **Release Query Options** panel (CMNRQC70) Option: 2 Release Parms - Query component list selection criteria See "Component Release Query List Parameters" on page 216.
List for browse or view the latest version of components in a release and its prior releases or in baseline.	Panel: **Release Component Query Options** (CMNRQC75) Option: 2 - Query the latest components that make up this release See "Release Component Query Criteria" on page 218.

Description	Panel / Option
List for browse or view all versions of components in a release and its prior releases or in baseline.	Panel: **Release Component Query Options** (CMNRQC75) Option: 4 - Query all occurrences of components that make up this release. See .

Component Release Query List Parameters

On the **Release Component Query Options** panel, when you select option **1 - In motion** and then select option **2 Release Parms** on the **Release Query Options** panel, the **Component Release Query List Parameters** panel is displayed.

```
CMNRQC71 ---------- Component Release Query List Parameters
Command ===>

Release: ZMF71200

Specify selection criteria:
Component  . . . . . . . . . $$$INDEX                                        +
Type . . . . . . . . . . . . JCS
Language . . . . . . . . . .
Compile procedure  . . . . .
User . . . . . . . . . . . .

Changed date: from . . . . .            to . . . . .            (yyyymmdd)
Enter "/" to select option
  _ Mixed case
```

This table describes the fields on the **Component Release Query List Parameters** panel. Multiple filter criteria are evaluated as logical ANDs.

Field	Description
Command	Type a command, or leave Command blank. CANCEL Return to the **Release Component Query Options** panel without processing. (Abbreviation: C)
Release:	Displays the Release to be searched.
Component	Type a full component name, a pattern, or leave blank to select all.
Type	Type a full library type, a pattern, or leave blank to select all.
Language	Type a full language name, a pattern, or leave blank to select all.
Compile procedure	Type a full compile procedure name, a pattern, or leave blank to select all.
User	Type a full userid, a pattern, or leave blank to select all.
Changed date from	Type a FROM date when the component was checked into the area, or leave blank to select all. This date is inclusive.
to	Type a TO date when the component was checked into the area, or leave blank to select all. This date is inclusive.

Field	Description
Mixed case	Type a value to determine the processing of lower case input in the **COMPONENT NAME** field. Omit to fold **COMPONENT NAME** input to upper case regardless of the case that you type. Selecte to process **COMPONENT NAME** input exactly as you type it, upper and lower case.

After you enter selection criteria on the he **Release Component Query Criteria** panel and press Enter, the results are displayed on the **Release Query Components In Motion** panel.

```
CMNRQC52          Query Components in Motion          Row  000001 Of  000004
Command ===>                                          Scroll ===> CSR
Component          Lib Date/time component
name               typ checked in to area  Orig. pkg User     Area    Type Step
$$$INDEX           JCS 2011-10-25-12.47.19 CZMF000036 WSER42   PRVDONE SUB 0015
$$$INDEX           JCS 2011-09-29-04.35.15 CZMF000036 WSER58   DEVUNIT SUB 0010
$$$INDEX           JCS 2011-10-25-13.02.46 CZMF000036 WSER42   QATAREA SUB 0020
$$$INDEX           JCS 2012-02-07-05.46.20 CZMF000036 WSER42   REGAREA SUB 0030
****************************** Bottom of Data ******************************
```

This table describes the fields on the **Release Query Components In Motion** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component. CANCEL Cancel panel without update. (Abbreviation: C) LOCATE Locate a component. (Abbreviation: L) *component*
Component name	Displays the component name.
Lib typ	Displays the component library type.
Date/time component checked in to area	Displays the date and time that the component was checked in to the area.
Orig. pkg	Displays the name of the change package where the component originated.
User	Displays the userid of the person who checked in the component.
Area	Displays the ID of the area where the component is checked in.
Type	SUB Subsystem area SYS System area
Step	Area step number

Release Component Query Criteria

On the **Release Component Query Options** panel, when you select option **2 - Query the latest...** or option **4 - Query all...**, the **Release Component Query Criteria** panel is displayed.

```
CMNRQC76                   Component Query Criteria
Command ===> _____  Scroll ===> CSR

Release: ZMF71200

Application  . . . . . . CZMF
Component  . . . . . . . $$$INDEX                                    +
Type . . . . . . . . . . JCS

Enter "/" to select option
  _ Exclude Baselines
  _ Mixed case
```

This table describes the fields on the **Release Component Query Criteria** panel.

Field	Description
Command	Type a command, or leave Command blank. CANCEL Return to the previous panel without processing. (Abbreviation: C)
Release:	Displays the release to be searched.
Application	Type a full application mnemonic, a pattern, or leave blank to select all.
Component	Type a full component name, a pattern, or leave blank to select all.
Type	Type a full library type, a pattern, or leave blank to select all.
Exclude Baselines	Omit this field to include baselines Select this field to exclude baselines.

Mixed case	This determines the processing of lower case input in the **Component Name** field.
	
	     Omit to fold **Component Name** input to upper case regardless of the case that you type.
	
	     Select to process **Component Name** input exactly as you type it, upper and lower case.

After you enter selection criteria on the **Release Component Query Criteria** panel and press Enter, the results are displayed on the **Release Query Components** panel.

This is a result for a fully qualified query for option **2 - Query the latest...**:

```
CMNRQC77                 Release Query Components           Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR


                     Date/time component
 Component        Typ  Like checked into area  Orig. pkg  Release   Area
_ $$$INDEX     +  JCS   P  2011-09-29-04.35.15 CZMF000036 ZMF71200  DEVUNIT
****************************** Bottom of data ******************************
```

This is a result for a fully qualified query for option **4 - Query all...**:

```
CMNRQC77                    Release Query Components        Row 1 to 20 of 20
Command ===> _____  Scroll ===> CSR

                            Date/time component
  Component       Typ  Like checked into area    Orig. pkg   Release    Area
_ $$$INDEX       +  JCS   P  2011-09-29-04.35.15 CZMF000036  ZMF71200   DEVUNIT
_ $$$INDEX       +  JCS   P  2011-10-25-12.47.19 CZMF000036  ZMF71200   PRVDONE
_ $$$INDEX       +  JCS   P  2011-10-25-13.02.46 CZMF000036  ZMF71200   QATAREA
_ $$$INDEX       +  JCS   P  2012-02-07-05.46.20 CZMF000036  ZMF71200   REGAREA
_ $$$INDEX       +  JCS   P  2010-10-10-10.20.31 CZMF000021  ZMF71000   DEVUNIT
_ $$$INDEX       +  JCS   P  2010-10-10-11.05.18 CZMF000021  ZMF71000   PRVDONE
_ $$$INDEX       +  JCS   P  2011-01-21-08.25.34 CZMF000021  ZMF71000   QATAREA
_ $$$INDEX       +  JCS   P  2011-01-21-08.44.00 CZMF000021  ZMF71000   REGAREA
_ $$$INDEX       +  JCS   P  2011-01-21-09.04.15 CZMF000021  ZMF71000   FINALGA
_ $$$INDEX       +  JCS   P  2011-07-05-02.13.46 CZMF000033  ZMF61300   DEVUNIT
_ $$$INDEX       +  JCS   P  2011-09-08-10.32.42 CZMF000033  ZMF61300   PRVDONE
_ $$$INDEX       +  JCS   P  2011-09-08-10.57.18 CZMF000033  ZMF61300   QATAREA
_ $$$INDEX       +  JCS   P  2011-10-07-17.10.48 CZMF000033  ZMF61300   REGAREA
_ $$$INDEX       +  JCS   P  2012-03-14-11.41.54 CZMF000033  ZMF61300   FINALGA
_ $$$INDEX       +  JCS   P  2011-06-09-08.20.08 CZMF000030  ZMF61202   DEVUNIT
_ $$$INDEX       +  JCS   P  2011-06-09-08.20.25 CZMF000030  ZMF61202   PRVDONE
_ $$$INDEX       +  JCS   P  2011-06-09-08.43.25 CZMF000030  ZMF61202   QATAREA
_ $$$INDEX       +  JCS   P  2011-06-09-10.57.28 CZMF000030  ZMF61202   REGAREA
_ $$$INDEX       +  JCS   P  2011-06-15-07.40.34 CZMF000030  ZMF61202   FINALGA
_ $$$INDEX       +  JCS   P  2008-08-22-01.52.00 CZMF000001  BASELINE
****************************** Bottom of data ********************************
```

This table describes the fields on the **Release Query Components** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component. CANCEL Cancel panel without update. (Abbreviation: C) LOCATE Locate a component. (Abbreviation: L) *component*
Line Command	B Browse component V View component
Component	Displays the component name.
Type	Displays the component library type.
Like	Displays the library Like-type for the component.
Date/time component checked in to area	Displays the date and time that the component was checked in to the area.
Orig. pkg	Displays the name of the change package where the listed component originated.
Release	Displays the release that contains the listed component.
Area	Displays the name of the area that contains the listed component.

Search Release Components

The two search release component options that are displayed on the **Release Component Query Options** panel are summarized in this table.

Description	Panel / Option
List the latest version of components in a release and its prior releases or in baseline that contain one or two character strings.	Panel: **Release Component Query Options** (CMNRQC75) Option: 3 - Search the latest components that make up this release.
List all versions of components in a release and its prior releases or in baseline that contain one or two character strings.	Panel: **Release Component Query Options** (CMNRQC75) Option: 5 - Search all components that make up this release.

On the **Release Component Query Options** panel, when you select option **3 - Search latest** or option **5 - Search all**, the **Component Query Criteria** panel is displayed.

```
CMNRQC78                      Component query criteria
Command ===> _____ Scroll ===> CSR

Release: ZMF71200

Application  . . . . . . CZMF
Component  . . . . . . . _____  +
Type . . . . . . . . . . JCS

Enter "/" to select option
  _ Exclude Baselines
  _ Mixed case
  _ Case Sensitive

Data String 1  . . . . . BIND PACKAGE(CMNx) MEMBER(CMNDB2SQ)_____
      and/or  . . . . . OR
Data String 2  . . . . .
```

This table describes the fields on the **Release Component Query Criteria** panel.

Field	Description
Command	Type a command, or leave Command blank. CANCEL Return to the previous panel without processing. (Abbreviation: C)
Release:	Displays the release to be searched.
Application	Type a full application mnemonic, a pattern, or leave blank to search all.
Component	Type a full component name, a pattern, or leave blank to search all.
Type	Type a full library type, a pattern, or leave blank to search all.

Field	Description
Mixed case	Type a value to determine the processing of lower case input in the **Component Name** field. Omit to fold **Component Name** input to upper case regardless of the case that you type. Select to process **Component Name** input exactly as you type it, upper and lower case.
Case Sensitive	Omit to fold the search **Data String 1** and **Data String 2** input to upper case regardless of the case that you type. Select to process search **Data String 1** and **Data String 2** input exactly as you type it, upper and lower case.
Data String 1	Type a character string to search for in components. Blanks between the first and last characters are searched for as entered. To search for leading or trailing blanks, enclose the string in single quotes ('). Leaving this field blank is the same as include all in search results.
and/or	OR Search for components that contain either **Data String 1** or **Data String 2** in a line (record). AND Search for components that contain **Data String 1** and **Data String 2** in the same line (record).
Data String 2	Type an optional second character string to search for in components. Blanks between the first and last characters are searched for as entered. To search for leading or trailing blanks, enclose the string in single quotes (').

After you enter selection criteria on the **Release Component Query Criteria** panel and press Enter, the results are displayed on the **Release Query Components** panel.

This is a result for a search using option **3 - Search latest**:

```
******************************** Top of Data *********************************

<*** Type: JCS, Package: N/A, Release: ZMF71200, Area: DEVUNIT ***>
<*** Location: CMNPRD.ZMF71200.DEVUNIT.CZMF.JCS

<*** Component: BINDPKG

 BIND PACKAGE(CMNx) MEMBER(CMNDB2SQ) ACT(REP) ISO(CS)         -
****************************** Bottom of Data ********************************
```

This is the first panel of a result for a search using option **5 - Search all**:

```
 ******************************* Top of Data *********************************

<*** Type: JCS, Package: N/A, Release: ZMF71200, Area: DEVUNIT ***>
<*** Location: CMNPRD.ZMF71200.DEVUNIT.CZMF.JCS

<*** Component: BINDPKG

 BIND PACKAGE(CMNx) MEMBER(CMNDB2SQ) ACT(REP) ISO(CS)         -

<*** Type: JCS, Package: N/A, Release: ZMF71200, Area: PRVDONE ***>
<*** Location: CMNPRD.ZMF71200.PRVDONE.CZMF.JCS
 BIND PACKAGE(CMNx) MEMBER(CMNDB2SQ) ACT(REP) ISO(CS)         -

<*** Type: JCS, Package: N/A, Release: ZMF71200, Area: QATAREA ***>
<*** Location: CMNPRD.ZMF71200.QATAREA.CZMF.JCS
 BIND PACKAGE(CMNx) MEMBER(CMNDB2SQ) ACT(REP) ISO(CS)         -

<*** Type: JCS, Package: N/A, Release: ZMF71200, Area: REGAREA ***>
<*** Location: CMNPRD.ZMF71200.REGAREA.CZMF.JCS
 BIND PACKAGE(CMNx) MEMBER(CMNDB2SQ) ACT(REP) ISO(CS)         -

<*** Type: JCS, Package: N/A, Release: ZMF61202, Area: DEVUNIT ***>
```

Chapter 8

Working with Release Packages and Components

This chapter describes some functions you use to manage packages and package components in a release. The component functions described here are those that behave differently in significant ways when a package is attached to a release.

The descriptions in this chapter are primarily functional descriptions that tell you how to use panels and fields in the ERO user interface to execute a package or component function. Additional information about the component functions described in this chapter is contained in the ChangeMan ZMF 8.1 User's Guide.

Accessing Release Packages and Components

When you work in a package attached to a release, you work on the *release* **- Release Package List** panel.

Follow these steps to access the *release* **- Release Package List** panel. The fields on the panel are described at the end of the procedure.

1 Follow these steps to access the release that contains the package where you want to perform a package function.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel is displayed.

```
CMNRMRLF                          Release List                     Row 1 to 2 of 2
Command ===> _____     Scroll ===> CSR

   Release  Sta  Install   Work request     Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have change packages attached to them.

2 On the **Release List** panel, type line command **PK** on a release row and press **Enter**. The *release* **- Release Package List** panel is displayed.

```
CMNRMPLF              FIN6430 - Release Package List          Row 1 to 3 of 3
Command ===> _____     Scroll ===> CSR

   Package    Sta  Area      Install DT/TM  Last Promotion      Aud Chkd In
   ACTP000032 DEV  ACCTPAY   20160429 2359  SERT6     S6P1IT    00       N
****************************** Bottom of data ******************************
```

The panel shows all packages attached to the release that you selected.

This table describes the fields on the *release* **- Release Package List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a package.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE *package* Locate a package. (Abbreviation: L)
	REFRESH Refresh the panel display from system files and tables. (Abbreviation: R)
Line Command	Type a line command listed on the panel.

Field	Description
Package	Displays the package name.
Sta	Displays the package status.
Area	Displays the starting subsystem area for the package. This is the area into which package components are copied when check-in is performed on the package.
Install DT/TM	The nearest date and time the package will be installed is displayed.
Last Promotion	The last promotion site nickname and level for this package is displayed. If the package was never promoted the level is 00.
Aud	Displays the return code of the last package audit that was performed.
Chkd In	Displays Y if an attempt has been made to check-in package components.

Package Functions in ERO

When a package is attached to a release, some package functions exclusive to releases are added. You can access these functions through the *release* - **Release Package List** panel described in the previous topic.

To make it easier to work on a release package, most of the commonly used package life cycle functions are also available through the *release* - **Release Package List** panel.

The following table provides information about functions listed on the *release* - **Release Package List** panel. The table shows whether the function is a ChangeMan ZMF base product function or an ERO function. For base product functions, the table shows the Package List Option for the function in the base product and the menu path (jump command) in the base product.

ERO Package Menu Item	ERO Function	Base Function	Package List Option	Base Menu Path
AP Audit Package		Yes	AP	=1.7
A1 Approve/Reject Package		Yes	A1	=4 > 1
A2 Display Reject Reasons		Yes	A2	=4 > 2
A4 Reset Approval-in-progress Indicator		Yes	A4	=4 > 4
A5 Re-submit Install JCL Build Request		Yes	A5	=4 > 5
BL Browse Compressed Listing		Yes	BL	=1.L
BD Base Demotion		Yes	DM	=3
BP Base Promotion		Yes	PR	=3
CI Check-in to Area	Yes			
C1 Checkout from Baseline/Promotion		Yes	C1	=1.5 > 1
C2 Checkout from List		Yes	C2	=1.5 > 2
C3 Checkout From Release	Yes		C3	=1.5 > 3
DM Demote Package (Area Demote)	Yes			

ERO Package Menu Item	ERO Function	Base Function	Package List Option	Base Menu Path
DP Detach from Release	Yes		UR	=1.2 > R
F1 Freeze Package Online		Yes	F1	=2 > 1
F2 Freeze Package Batch		Yes	F2	=2 > 2
F3 Selective Freeze/Unfreeze		Yes	F3	=2 > 3
F4 Reset Freeze-in-progress Indicator		Yes	F4	=2 > 4
QC Query Area Components	Yes			
QP Query Package		Yes	QP	=Q.P
PM Promote Package (Area Promote)	Yes			
RB Retrieve Batch	Yes			
RC Recompile		Yes	RC	=1.8
RL Relink		Yes	RL	=1.9
RP Retrieve Package	Yes			
RV Revert Package		Yes	RV	=R
S1 Stage From Development		Yes	S1	=1.6 > 1
S2 Stage From Package		Yes	S2	=1.6 > 2
S3 Stage From Selection List		Yes	S3	=1.6 > 3
U1 Update Package Control Information		Yes	U1	=1.2 > 1
U2 Update Package General Information		Yes	U2	=1.2 > 2
U3 Update Package Implementation Info		Yes	U3	=1.2 > 3
U7 Update Package Site (remote) Info		Yes	U7	=1.2 > 7

NOTE Backout for a package attached to a release (=B1) is executed automatically when you back out the release.

Not every package function is accessible through the *release* **- Release Package List** panel. These package functions are available only through the base ChangeMan ZMF interface.

Base Package List Options	Base Menu Path
BB Browse/Print Baseline/Promotion	=1.B
CC Compare Staging to Baseline / Promotion	=1.C
D1 Memo Delete Change Package	=D.1
D2 Undo Memo Delete Package	=D.2
F5 Re-submit Install JCL Build Request	=2 > 5
OF Work With Online Forms	=O
RP Generate Application/Package Rpts	=6

Base Package List Options	Base Menu Path
SC Scan Baseline for Character String	=1.S
U4 Update Scheduling Dependencies	=1.2 > 4
U5 Update Affected Application Info	=1.2 > 5
U6 Update Participating Package Info	=1.2 > 6
U8 Change Complex/Super Package to CLO status	=1.2 > 8
U9 Change Complex/Super Package to OPN status	=1.2 > 9
UA Rename and Scratch Components (Package Driven)	=1.4 > 2
UB Rename and Scratch Components (Baseline Driven)	=1.4 >1
UD Update Package Db2 Info	=1.2 > D
UE Update Package User Info	=1.2 > E
UI Update Package IMS System Info	=1.2 > I
UR Update Package Release Info	=1.2 > R
ZP Compress Package Staging Libs	=1.Z

Release Package and Component Behavior

You bring a package and the components it contains under the control of a release by attaching the package to the release. The package components remain under the control of the package, and for the most part, you execute standard change package life cycle functions to prepare these components for installation into production.

However, ERO alters package and component behavior in important ways:

- You cannot change the package install date so that it falls outside the range of the release install date.

- You can check out, recompile, and relink components from release area libraries in the release your package is attached to, from area libraries in prior releases, and from baseline libraries.

- Release area libraries for your application and area libraries for related applications defined in your release are included in SYSLIB concatenations when you stage, recompile, and relink components in your package. The same library concatenations are used by package audit.

- Installation JCL in the package X node library is created when the release is blocked, not when the package is frozen.

- Components are installed from release final area libraries, not from package staging libraries. Test area in the final release area guarantees that the area components are the same as package components.

- When test area is executed in the final release area, automated cleanup can delete components from your package, and even detach a package if it is empty. Automated cleanup must be enabled for DEV, FRZ, and/or APR package status in the release definition.

Searching Area Libraries for Latest

Checkout, recompile, and relink can search for the "latest" version of a component that is checked in to an area in your release or in prior releases. This version of the component most likely contains the latest changes.

The list of libraries that are searched for the latest version is sometimes referred to as a "consolidated list," and in other places it is called an "extended baseline."

The search for the latest version is executed in this order:

1 In the current release: Area libraries beginning with the starting area for your package and proceeding up the chain of areas through the final area.

2 In prior releases, not installed, in inverse order of the release Install From Date/Time: All area libraries in ascending order of the step number specified in each area definition.

3 Baseline libraries

These additional criteria apply:

■ Areas are skipped if they are defined with parameter Allow Component Checkout = N.

■ Where areas in a prior release have the same step number, those areas are searched in the order they were created in release configuration.

■ Components must be checked in to a release from a package in the same application as the package to which you are checking out.

If you specify a full component name for the function you wish to execute, the search for latest returns one component. In the case shown here, the component name for checkout is wildcarded as ACTPCTC*, and the **Release Checkout *area* Components** panel shows where the latest version of several components were found.

```
CMNCKO52  Release CHECKOUT ACCTPAY Components          Row  000001 Of  000004
Command ===> _____ Scroll ===> CSR

  Component       Lib  Like Checked in to area  Package     Release   Area
_ ACPCTC10        CTC   P   2010-08-16-17.14.47 ACTP000037  FIN6420   ACCTPAY
_ ACPCTC20        CTC   P   2010-08-16-15.22.33 ACTP000036  FIN6410   FINANCE
_ ACPCTC30        CTC   P   2010-07-07-12.15.05 ACTP000015  BASELINE
_ ACPCTC99        CTC   P   2010-07-07-12.15.05 ACTP000015  BASELINE
***************************** Bottom of Data *****************************
```

Attaching a Package to Release

Attaching a change package to a release is the first step in bringing components that you are developing or changing into the ERO release life cycle.

You use the create package and update package functions in the base ChangeMan ZMF product to attach a package to an ERO release. There is no ERO function to attach a package.

NOTE You can attach a package to a release if the package has been promoted to sites and levels in base ChangeMan ZMF. You can attach a promoted package to a release only if the promotion sites and levels are not defined to the release you are attaching to.

Attach at Package Create

Follow these steps to attach a change package to an ERO release at the time that you create the package.

1 When you initiate the package create process in the base ChangeMan ZMF product, the **Create: Create A New Package** panel is the first panel displayed.

```
CMNCRT0R                    Create: Create a New Package
Option ===> _____

      L Long method                         S Short method
      D No package description              I No implementation instructions


Package title
 Package for testing new option
Application  . . . . . . . . . ACTP      (Blank or pattern for list)
Requester's name . . . . . . . John Doe
Requester's phone  . . . . . . 977777555
Work request . . . . . . . . . 100001000106
Department . . . . . . . . . . IDD
Package level  . . . . . . . . 1            (1. Simple 2. Complex
                                             3. Super  4. Participating)
Package type . . . . . . . . . PLANNED    (Planned or Unplanned)
Package time span  . . . . . . PERM       (Permanent or Temporary)
Package to copy forward  . . .            (Optional package name)
Unplanned reason code  . . . .            (* for list)
Temporary change duration  . .            (In days)


Enter "/" to select option
  _ Attach package to release
```

2 On the **Create: Create A New Package** panel, sekect the **Attach Package To Release** field at the bottom of the panel. When you press **Enter**, the *application - Application Release List* panel is displayed.

```
CMNRMCRL                ACTP - Application Release List        Row 1 to 4 of 4
Command ===> _____  Scroll ===> CSR

   Release   Description
 _ FIN6410   FIN6410 Release for December
 _ FIN6420   FIN6420 Release for January
 _ FIN6430   FIN6430 Release for February
 _ FIN6440   FIN6430 Release for February
****************************** Bottom of data ******************************
```

> **NOTE** If you create a package using the copy package forward feature, and if the package you copy is attached to a release, your new package is automatically attached to the same release. The *application* **- Application Release List** panel is not displayed.

Use this panel to choose a release for your package. Releases are listed on this panel if:

- Your package application is joined to the release.

- The release status is DEV.

- The release install date is not passed.

3 On the *application* **- Application Release List** panel, type line command **S** on a release row and press **Enter**. The *release* **Release Area List** panel is displayed.

```
CMNRMCAL                    FIN6420 - Release Area List          Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

      Area                                      Area  Prior      Next
    Name     Type  Aud  Blk  Cia  Coa  Cir  Cor  step  area       area
 _  ACCTPAY  0          N    Y    N    N    N    0001             FINANCE
 _  GENLEDGR 0          N    Y    N    N    N    0002             FINANCE
****************************** Bottom of data ******************************
```

This panel shows only the starting subsystem areas for the release you selected. Use this panel to choose the starting subsystem area for package check-in to the release.

This table describes the fields on the *release* **Release Area List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an area.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate an area. (Abbreviation: L) *area*
	REFRESH Refresh the panel display from system files and tables. Abbreviation: R)
Line Command	Type S to select a release area subsystem that will be the package check-in target.
Area Name	Displays the area name
Area Type	Displays the area type code.
	0 Subsystem area
	1 System area
Aud	Displays the return code of the last release audit run for this area.
Blk	Displays Y if the release area is blocked.
Cia	Displays Y if all check-in approvers have entered their approval.
Coa	Displays Y if all check-off approvers have entered their approval.
Cir	Displays Y if at least one check-in approver has entered a reject.

Field	Description
Cor	Displays Y if at least one check-off approver has entered a reject.
Area Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Prior Area	Displays the prior area specified in the area definition.
Next Area	Displays the next area specified in the area definition.

4   On the *release* **Release Area List** panel, type line command **S** on an area row and press **Enter**. The attach package function is complete, and you are returned to the standard package create process.

5   Later, when you type the **Install Date/Time** fields on the **Create: On Site Information** panel, the package install date is validated against the release install date range. The package install date must fall within the release install date range.

Attach Using Package Update

Follow these steps to attach a change package to an ERO release sometime after you have created the package.

1   Access the **Package - *package* - Release Options** panel through the following menu path.

   a   On the Primary Option Menu, choose option **1 Build** and press **Enter** to display the **Build Options** panel.

   b   On on the **Build Options** panel, choose option **2 Update** and press **Enter** to display the **Update: Package Information** panel.

   c   On the **Update: Package Information** panel, fill in the **Package ID** field, then choose option **R** and press **Enter** to display the **Package - *package* - Release Options** panel.

```
CMNRMBRO            Package - ACTP000032 - Release Options
Option ===> _____

     Current Release :           Area :

1  Update         Update package current Release and/or Area
2  Detach         Detach package from Release Management
```

NOTE This panel can also be accessed through option **UR** on the **Change Package List** panel.

2 On the **Package - *package* - Release Options** panel, choose option **1 Update** and press **Enter**. The ***application* - Application Release List** panel is displayed.

```
CMNRMBRL               ACTP - Application Release List        Row 1 to 4 of 4
Command ===> _____        Scroll ===> CSR

     Current Release :            Area :

  Release    Description
_ FIN6410    FIN6410 Release for December
_ FIN6420    FIN6420 Release for January
_ FIN6430    FIN6430 Release for February
_ FIN6440    FIN6430 Release for February
***************************** Bottom of data *****************************
```

Use this panel to choose a release for your package. Releases are listed on this panel if:

- Your package application is joined to the release.

- The release status is DEV.

- The release install date is not passed.

3 On the ***application* - Application Release List** panel, type **S** on the line command of a release and press **Enter**. The **Release Area List** panel is displayed.

```
CMNRMBAL                   FIN6430 Release Area List          Row 1 to 2 of 2
Command ===> _____        Scroll ===> CSR

Current Release:           Area:

      Area                  Status           Area  Prior    Next
   Name    Type  Aud  BLK  CIA  COA  CIR  COR  step  area     area
_  ACCTPAY   0    00   N    N    N    Y    N   0001           FINANCE
_  GENLEDGR  0         N    N    N    N    N   0002           FINANCE
***************************** Bottom of data *****************************
```

This panel shows only the starting subsystem areas for the release you selected. Use this panel to choose the starting subsystem area for package check-in to the release.

This table describes the fields on the ***release* Release Area List** panel.

Field	Description
Command	Type a command, or leave blank to type a Line Command on an area.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate an area. (Abbreviation: L) *area*
	REFRESH Refresh the panel display from system files and tables. (Abbreviation: R)
Line Command	Type S to select a release area subsystem that will be the package check-in target.
Area Name	Displays the area name

Field	Description
Area Type	Displays the area type code. 0 Subsystem area 1 System area
Area Aud	Displays the return code of the last release audit run for this area.
Status BLK	Displays Y if the release area is blocked.
Status CIA	Displays Y if all check-in approvers have entered their approval.
Status COA	Displays Y if all check-off approvers have entered their approval.
Status CIR	Displays Y if at least one check-in approver has entered a reject.
Status COR	Displays Y if at least one check-off approver has entered a reject.
Area Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Prior Area	Displays the prior area specified in the area definition.
Next Area	Displays the next area specified in the area definition.

4 On the **Release Area List** panel, type **S** in the line command for an area row and press **Enter**. You are returned to the **Package -** *package* **- Release Options** panel that shows the release and area to which your package is now attached.

```
CMNRMBRO            Package - ACTP000032 - Release Options    Package Updated
Option ===> _____

      Current Release : FIN6430   Area : ACCTPAY


1  Update          Update package current Release and/or Area
2  Detach          Detach package from Release Management
```

5 Attach package is complete.

Detaching Package From Release

When you detach a package from an ERO release, you sever all relationships to the release, its areas, and area libraries. You break relationships to components in area libraries for that release, and you break relationships to components in area libraries for releases that define that release as a prior release.

NOTE You cannot detach a package from a release if there are components from your package in area libraries for the release or if components have been promoted to a promotion site/level that has been defined for the release. Retrieve package components from all areas before you detach the package. See "Retrieving a Package" on page 259 for steps to retrieve a package.

You can detach your package using either the base ChangeMan ZMF product or the ERO Package menu.

Detach Using Package Update

Follow these steps to detach a change package from an ERO release using the package update functions in the base ChangeMan ZMF product.

1   Access the **Package -** *package* **- Release Options** panel through the following menu path.

   a   On the Primary Option Menu, choose option **1 Build** and press **Enter** to display the **Build Options** panel.

   b   On on the **Build Options** panel, choose option **2 Update** and press **Enter** to display the **Update: Package Information** panel.

   c   On the **Update: Package Information** panel, fill in the **Package ID** field, then choose option **R** and press **Enter** to display the **Package -** *package* **- Release Options** panel.

```
CMNRMBRO              Package - ACTP000032 - Release Options
Option ===> _____

     Current Release : FIN6430   Area : ACCTPAY

1  Update         Update package current Release and/or Area
2  Detach         Detach package from Release Management
```

NOTE This panel can also be accessed through option **UR** on the **Change Package List** panel.

2   On the **Package -** *package* **- Release Options** panel, choose option **2 Detach** and press **Enter**. You request is processed, and the **Current Release** and **Area** fields are cleared on the **Package -** *package* **- Release Options** panel.

```
CMNRMBRO              Package - ACTP000032 - Release Options    Package Detached
Option ===> _____

     Current Release : FIN6430   Area : ACCTPAY

1  Update         Update package current Release and/or Area
2  Detach         Detach package from Release Management
```

3   Detach package is complete.

Detach Using ERO Package Option

Follow these steps to detach a package using the ERO Package menu.

1   Follow these steps to access the package you want to detach from a release.

   a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

c The **Release List** panel is displayed.

```
CMNRMRLF                         Release List                    Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20180329  WR 9010           FINANCE        USER015  00001
__ FIN6430  DEV  20180329  WR 9030           FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have change packages attached to them.

d On the **Release List** panel, type line command **PK** on a release row and press **Enter**. The *release* **- Release Package List** panel is displayed.

```
CMNRMPLF               FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

   Package     Sta  Area     Install DT/TM  Last Promotion     Aud Chkd In
__ ACTP000032  DEV  ACCTPAY  20180329 2359  SERT6     S6P1IT  00        N
__ ACTP000131  DEV  ACCTPAY  20180329 2359  SERT6     S6P1IT  00        N
****************************** Bottom of data ******************************
```

The panel shows all packages attached to the release that you selected.

The fields on the *release* **- Release Package List** panel are described on .

2 On the *release* **- Release Package List** panel, type **DP** in the line command of the package you want to detach, and press **Enter**. The package detach panel is displayed (CMNRMPD1).

```
CMNRMPD1                     FIN6430 - Package Detach
Command ===> _____ Scroll ===> CSR

       Package: ACTP000131     Status: DEV      Install date: 20180329

Enter "/" to select option
 / Validate package detach only
 / Auto demote retrieve with detach
 _ Attach to a different release

 New Package Install   Time
             Date      From To
             _____  ____ ____

Job statement information:
   //USER015Q JOB (X170,134),'DETACH',
   //           CLASS=A,MSGCLASS=X,TIME=4,NOTIFY=USER015,
   //           REGION=4M
   //*
```

3 Select the field 'Validate package detach only' and press ENTER. This will warn if there is a problem for example Detach Error. Press PF1 for the long message:

```
CMNRMPD1                     FIN6430 - Package Detach              Detach Error
Command ===> _____  Scroll ===> CSR

          Package: ACTP000131      Status: DEV     Install date: 20180329

Enter "/" to select option
  / Validate package detach only
  / Auto demote retrieve with detach
  _ Attach to a different release

  New Package Install    Time
              Date       From To
              _____   ____ ____


Job statement information:
  //USER015Q JOB (X170,134),'DETACH',_____
  //             CLASS=A,MSGCLASS=X,TIME=4,NOTIFY=USER015,_____
  //             REGION=4M_____
  //*_____
        +--------------------------------------------------------+
        | CMR7550I - Package ACTP000131 is Checked in and promoted. |
        +--------------------------------------------------------+
```

4

The package detach will detach the package from a release. It will allow you to automatically demote components from the promotion libraries and retrieve components from the area libraries if you have the proper access authority to do so. Keep in mind that a demotion is a batch job and since this is an automatic function once the batch jobs are successfully submitted the package will be retrieved and detached even though the batch demotion job may not have completed. This also includes attach to a new release if selected.

You can also optionally attach the package to a different release.

If no automatic demote/retrieve are selected a standard validate and package detach is executed. If no release is selected the package is just detached.

Package - The change package to be detached

Status - The change package status (must be DEV status)

Install Date - The change package current install date.

Validate package detach only - Enter '/' to instruct ChangeMan to only validate the package detach. This option will not detach the package but will let you know if the package has components promoted and/or checked into the release.

Auto demote retrieve with detach - Enter '/' to instruct ChangeMan to automatically demote the package components if promoted and retrieve components from the release if the package is checked into the release prior to the detach.

Attach to a different release - Enter '/' to instruct ChangeMan to attach the change package to another release.

New Package Install Date, Time From To - Apply a new install date and time to the change package. This date and time will be applied to all sites for the change package. If not entered the current package date and time will remain if the change package is within the new release install range. If not within the release install range the change package install date and time will automatically be taken from the new release it is being attached to. The release from date plus 1 day will be used as the package install date.

Job statement information - Enter the Job card information for the auto-demote. This is required for the demotion process if the package is promoted.

Invalid install dates will also be reported, press PF1 for the long message:

```
CMNRMPD1                   FIN6430 - Package Detach      Invalid Install Date
Command ===> _____ Scroll ===> CSR

         Package: ACTP000131     Status: DEV     Install date: 20180329

Enter "/" to select option
  / Validate package detach only
  / Auto demote retrieve with detach
  _ Attach to a different release

  New Package Install    Time
             Date       From To
             20180401   1200 1300

Job statement information:
   //USER015Q JOB (X170,134),'DETACH',
   //            CLASS=A,MSGCLASS=X,TIME=4,NOTIFY=USER015,
   //            REGION=4M
   //*
+-----------------------------------------------------------------------+
| CMR7512I - Install date must be within release date 20180430 to 20181231. |
+-----------------------------------------------------------------------+
```

Detach Processing - If no options are specified this will do a standard detach and it will be stopped with a message if the package is promoted or checked into the release.

```
CMNRMPD1                    FIN6430 - Package Detach
Command ===> _____ Scroll ===> CSR

        Package: ACTP000131      Status: DEV      Install date: 20180329

Enter "/" to select option
  _ Validate package detach only
  _ Auto demote retrieve with detach
  _ Attach to a different release

  New Package Install    Time
             Date        From To
             _____    ____ ____

Job statement information:
   //USER015Q JOB (X170,134),'DETACH',_____
   //            CLASS=A,MSGCLASS=X,TIME=4,NOTIFY=USER015,_____
   //            REGION=4M_____
   //*_____
```

```
CMNRMPLF               FIN6430 - Release Package Li    Release Detach Error
Command ===> _____ Scroll ===> CSR

   Package    Sta Area    Install Dept Work request Promotion    Aud  Chkin
__ ACTP000129 FRZ START01 20171221 DEV  WORK01       00                 N
__ ACTP000130 DEV START01 20180525 DEV  WORK01       00                 N
DP ACTP000131 DEV START01 20180329 DEV  WORK01       01 ACTP            Y
***************************** Bottom of data ******************************
...
+-----------------------------------------------------------------------------+
| CMR4402I - Package ACTP000131 has components in the Release, RP to Retrieve. |
+-----------------------------------------------------------------------------+
```

Select Auto demote retrieve with detach:

```
CMNRMPD1                    FIN6430 - Package Detach
Command ===> _____ Scroll ===> CSR

         Package: ACTP000131      Status: DEV      Install date: 20180329

Enter "/" to select option
  _ Validate package detach only
  / Auto demote retrieve with detach
  _ Attach to a different release

  New Package Install    Time
              Date       From To
              _____   ____ ____

Job statement information:
  //USER015Q JOB (X170,134),'DETACH',_____
  //               CLASS=A,MSGCLASS=X,TIME=4,NOTIFY=USER015,_____
  //               REGION=4M_____
  //*_____
```

5   The list of packages on the panel is updated to remove the package that you detached from the release.

```
CMNRMPLF                 FIN6430 - Release Package List       Package Detached
Command ===> _____ Scroll ===> CSR

    Package     Sta  Area      Install DT/TM  Last Promotion     Aud Chkd In
 __ ACTP000032  DEV  ACCTPAY   20160429 2359  SERT6     S6P1IT   00       N
****************************** Bottom of data ******************************
```

6   Detach package is complete.

Detach and attach to another release

If no auto demote/retrieve is selected it is a standard detach and will be stopped with a message if the package is promoted and/or checked into the release. Note that the install date of the package is not within the new release install range. Then note the auto adjust

of the new package install date (highlighted in red). Here we select also the field **Attach to a different release**.

```
CMNRMPD1                      FIN6430 - Package Detach
Command ===> _____ Scroll ===> CSR

        Package: ACTP000131     Status: DEV     Install date: 20180329

Enter "/" to select option
  _ Validate package detach only
  / Auto demote retrieve with detach
  / Attach to a different release

  New Package Install   Time
              Date      From To
              _____  ____ ____

Job statement information:
  //USER015Q JOB (X170,134),'DETACH',
  //            CLASS=A,MSGCLASS=X,TIME=4,NOTIFY=USER015,
  //            REGION=4M
  //*
```

Panel CMNRMBRL will then display and you can select the different release you want to attach the package to:

```
CMNRMBRL                   Application Release List        Row 1 to 17 of 17
Command ===> _____ Scroll ===> CSR

     Current Release : FIN6430A  Area : START01

  Release    Description
 _ ACTPADT1  This is USER015's release test
 _ ACTPAPPL  This is USER015's second release test CMN530
...
 _ ACTPPRMX  This is USER015's release test
 S FIN6430B  This is USER015's release test CMN820
```

Then panel CMNRMBAL displays to allow you to select the Area you want to use:

```
CMNRMBAL                   FIN6430A Release Area List        Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

Current Release: FIN6430A   Area: START01

     Area                 Status              Area  Prior    Next
   Name    Type Aud  BLK CIA COA CIR COR  step  area     area
s  START02  0         N   N   N   N   N   0002           FINAL01
_  START03  0         N   N   N   N   N   0003           FINAL01
_  START01  0         N   N   N   N   N   0010           FINAL01
****************************** Bottom of data ******************************
```

Then panel CMNRMPLF will display again with the appropriate message:

```
CMNRMPLF                  FIN6430A - Release Package List        Package Updated
Command ===> _____  Scroll ===> CSR_

   Package    Sta Area     Install  Dept Work request  Promotion    Aud  Chkin
__ ACTP000129 FRZ START01  20171221 DEV  WORK01         00                 Y
__ ACTP000130 DEV START02  20180501 DEV  WORK01         00                 Y
****************************** Bottom of data ******************************


   +-------------------------------------------------------------------+
   | CMR7508I - Package ACTP000131 is now attached to release FIN6430B. |
   +-------------------------------------------------------------------+
```

Select the release FIN6430B with PK from the release list panel CMNRMRLF to show the FIN6430B release package list and the package will show with the changed install date:

```
CMNRMPLF                  FIN6430B - Release Package List         Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

   Package    Sta Area     Install  Dept Work request  Promotion    Aud  Chkin
__ ACTP000131 DEV START02  20180501 DEV  WORK01         01 ACTP              N
****************************** Bottom of data ******************************
```

Checking Out Package Components from Release

After you attach a package to a release, you can check out components into your package from releases that have not been installed.

Checkout from release lets you start coding from a version of a component that is more recent than the version in baseline, and which already contains earlier changes from your project or another project.

If you check out a version of a component from a prior release, you may be able to avoid an out-of-sync audit error indicating regression in your release after the prior release is installed.

If you check out a component from an area in the current release, you will eventually encounter an overlay condition in package or area check-in unless the other version is retrieved.

NOTE Your release manager can block an area from checkout by setting an indicator in the area definition. Ask your release manager what areas you are allowed to check out from.

Checkout from release offers you four choices:

- **Checkout from current Package Release and Area** - Use this option when you want to start your coding using a version of a component that has been checked in to the starting area for your package.

- **Checkout from current Package Releases other Areas** - Use this option when you want to start your coding using a version of a component that has been checked in to any area in the current release.

- ■ **Checkout from Prior Release -** Use this option if you want to start your coding using a version of a component that is in a release that is defined as a prior release.

- ■ **Checkout latest components from consolidated list** - Use this option when you want to start your coding from the latest version of a component checked in to your release or prior releases.

Execute these steps to checkout from release in ERO:

1 Follow these steps to access the package that you want to check out to.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel is displayed.

```
CMNRMRLF                          Release List                    Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install   Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010           FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030           FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- • Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- • Have change packages attached to them.

   d On the **Release List** panel, type line command **PK** on a release row to select the release that contains the package you want to check out to. Press **Enter**, and the *release* **- Release Package List** panel is displayed.

```
CMNRMPLF               FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

   Package    Sta  Area     Install DT/TM  Last Promotion     Aud Chkd In
__ ACTP000032 DEV  ACCTPAY  20160429 2359  SERT6     S6P1IT  20          N
****************************** Bottom of data ******************************
```

The panel shows all packages that are attached to the release that you selected.

The fields on the *release* **- Release Package List** panel are described on .

2 On the *release* **- Release Package List** panel, type **C3** in the line command of the package want to check out components to, and press **Enter**. The **Release Management Checkout Options** panel is displayed.

```
CMNRCKOP                Release Management Checkout Options
Option ===> _____

      Package: ACTP000032    Release: FIN6430    Area: ACCTPAY

  1 Checkout from current package release and area
  2 Checkout from current package release other areas
  3 Checkout from a prior release
  4 Checkout latest components from consolidated list
  5 Confirm prior release version compatibility
```

This panel offers you four options for choosing the area to check out from and one option to resolve potential version regressions.

- If the component you want to work on has already been checked in to the starting area for your package, select option **1** and press **Enter**. The **Release Check-out Options** panel is displayed. Go to **Step 5** in this procedure for a picture of this panel and a description of the panel fields, then go to **Step 6** to continue the checkout process.

- If you want to check out from any area in the current release, choose option **2** and press **Enter**. The *release* **Release Area Selections** panel is displayed. Go to **Step 4** in this procedure for a picture of this panel, then go to **Step 5** to continue the checkout process.

- If you want to check out from an area in a prior release, choose option **3**, press **Enter**. The next steps in the checkout process follow immediately.

- If you want to check out the latest version of a component checked in to your release or a prior releases, select option **4** and press **Enter**. The **Release Check-out Options** panel is displayed. Go to **Step 5** in this procedure for a picture of this panel and a description of the panel fields, then go to **Step 6** to continue the checkout process.

- If you want to find, display, and resolve a prior release version regression flagged by ERO audit as an ERROR417!, without repeating the checkout from prior release, see for instructions on how to use option **5** on the **Release Management Checkout Options** panel.

3 If you selected option **3** on the **Release Management Checkout Options** panel, the *release* **- Prior Release Selection List** panel is displayed.

```
CMNRCKRL              FIN6430 Prior Release Selection List      Row 1 to 1 of 1
Command ===> _____      Scroll ===> CSR

    Release     Install     Last Area
_   FIN6410     20151219    FINANCE
****************************** Bottom of data ******************************
```

This panel displays releases that have been defined as prior releases for the current release (the release that contains your change package).

4   On the *release* **- Prior Release Selection List** panel, type **S** in the line command
for the prior release you want to check out from. Press **Enter**, and the *release*
Release Area Selections panel is displayed for the prior release you selected.

```
CMNRCKAL                  FIN6410 Release Area Selections        Row 1 to 3 of 3
Command ===>                                                     Scroll ===> CSR

   Name        Type        Description
_  ACCTPAY     SUBSYS      Starting Area for Accounts Payable components
_  GENLEDGR    SUBSYS      Starting Area for General Ledger components
_  FINANCE     SYSTEM      Final area for Finance components
****************************** Bottom of data ******************************
```

This panel shows all areas that are available for checkout.

5   On the *release* **Release Area Selections** panel, type **S** in the line command for the
release area you want to check out from. Press **Enter**, and the **Release Check-out
Options** panel is displayed.

```
CMNCKO50                     Release Checkout Options
Option ===>

     Package: ACTP000032    Release: FIN6410     Area: ACCTPAY

   1 From area to package libraries   2 List area selection criteria

Component name . . . . .                                                      +
Component type . . . . .  ___   (required for checkout latest)
Report format  . . . . . LONG   (Short-errors only, Long-all components)
Check out to . . . . . . S      (S-Staging library, P-Personal library)
Personal library . . . .                                                      +
Library dsorg  . . . . . PDS    (PDS, PDSE, SEQ, PAN, LIB, HFS)

Enter "/" to select option
  _ Lock component
  _ Batch checkout
  _ Confirm checkout
  _ Suppress batch messages
  _ Save Prior Version
  / Mixed Case
```

This table describes fields and options on the **Release Check-out Options** panel.

Field	Description
Package	Displays the package name you are checking out to.
Release	Displays the release that contains the area you are checking out from.
Area	Displays the area that you are checking out from.
Options	Choose an option to display a list of components to select for checkout.
	1 Area — Display all package components on the **Release Check-out *area* Components** panel where you select components for checkout.
	2 Area Parms — Display the **Component Release Area Check-out List Parameters** panel where you to specify area component filters, then display the filtered list on the **Release Check-out *area* Components** panel where you select components for checkout.

Field	Description
Component Name	Type one of the following to select area components by component name. Full component name is required to check out to a "personal library" that is a sequential dataset.
	Name Select area components that match a component name.
	Mask List area components with names that fit a mask.
	Blank List area components that satisfy all other selection criteria.
Component Type	Type one of the following to select area components by component (library) type. The default for this field is blank.
	Type Select area components that match a component type.
	Mask List area components with component types that fit a mask.
	Blank List area components that satisfy all other selection criteria.
	Note: Full library type is required to: ■ Check out to a personal library that is a sequential dataset ■ Check out latest components from consolidated list
Report Format	Type an online report format for the results of the checkout process.
	Short Only display components with checkout errors. (Abbreviation: S)
	Long Display all components requested for checkout. (Abbreviation: L)
Check Out To	Type S or P to determine whether components are checked out to a staging library or a personal library or dataset. When you check out to a personal library or dataset, the component is also copied to a package staging library.
	S Check out components to a ChangeMan ZMF staging library.
	P Check out component to a personal development library or dataset.
Personal Library	Type the dataset name for a personal library or dataset if you typed P in the **Check Out To** field.
Library DSORG	Type a dataset organization for the library or dataset named in the **Personal Library** field.
	PDS PDS library
	PDSE PDSE library
	SEQ Sequential dataset
	PAN CA Panvalet file
	LIB CA Librarian file
Lock Component	Select this field to immediately lock the components that you successfully check out into your package. See "Locking and Unlocking Package Components" in the *ChangeMan ZMF User Guide.*
Batch Checkout	Select this field to create batch JCL and submit a job to run in batch to free your terminal while checkout is processing.
Confirm Checkout	Select this field to enable the concurrent development warning panel (CMNCMPSW), which lists other active packages that contain a component that you select for checkout.
Suppress Messages	If you selected the **Batch Checkout** field, select **Suppress Messages** to suppress the SEND message normally broadcast when a batch checkout job completes to tell you whether the checkout was successful. (Job submitted messages are also suppressed.)

Field	Description
Save Prior Version	If staging versions is enabled with PROMPT for a library type in this application, Select this field to save staged components that will be overlaid by checkout.
Mixed Case	Type a value to determine the processing of lower case input in the **Component Name** field.
	Omit this field to fold **Component Name** input to upper case regardless of the case that you type.
	Select this field to process **Component Name** input exactly as you type it, upper and lower case.

6 Choose one of the **Options** on the **Release Check-out Options** panel and press **Enter**.

If you chose option **1 Area**, the **Release Check-out** *area* **Components** panel is displayed. The panel lists all components belonging to your package application that satisfy **Component Name** and **Component Type** criteria entered on the **Release Check-out Options** panel and are checked in to the selected area.

If you chose option **2 Area Parms**, the **Component Release Area Check-out List Parameters** panel is displayed, where you to specify additional component selection criteria.

```
CMNCKO51          Component Release Area Checkout List Parameters
Command ===>

        Release: FIN6410        Area:   ACCTPAY
        Package: ACTP000032     Status: DEV      Install date: 20160429

Release area selection criteria:
Language . . . . . . . . . _____

Changed date: from . . . . _____      (yyyymmdd)
              to . . . . . _____      (yyyymmdd)

Compile procedure  . . . . _____
User . . . . . . . . . . . _____
```

When you press **Enter**, the **Release Check-out *area* Components** panel is displayed. The panel lists components belonging to your package application that are checked in to the selected area and that pass your selection criteria.

```
CMNCKO52  RELEASE CHECKOUT ACCTPAY Components           Row  000001 Of  000011
Command ===> _____       Scroll ===> CSR

  Component      Lib  Like Checked in to area  Package     Release  Area
_ ACPCTC10       CTC  P    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPJCL10       JCL  J    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRC1A       LOD  L    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRC1A       LST  X    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRC1A       SRC  S    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRS1B       LOS  N    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRS1B       LST  X    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRS1B       SRS  S    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRS1C       LOS  N    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRS1C       LST  X    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
_ ACPSRS1C       SRS  S    2010-11-27-16.23.40 ACTP000037  FIN6420  ACCTPAY
****************************** Bottom of Data ******************************
```

This table describes the fields on the **Release Checkout *area* Components** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *component* — Locate a component. (Abbreviation: L)
	SETALL — Sets all line commands to S to select all listed components.
	SETOFF — Sets all line commands to blank to deselect any selected components.
Line Command	Type S to select a component for checkout.
Component	Displays the component name.
Lib	Displays the component library type.
Like	Displays the ERO like-type for the component.
Component checked in to area	Displays the date and time that the component was checked in to the area.
Package	Displays the name of the package where the component originated.
Release	Displays the release.
Area	Displays the area you are checking out from.

Type **S** on the line command for components you want to check out to your package, or use the **SETALL** command to select all listed components.

NOTE If you filter the list of package components with selection criteria on the **Component Release Area Check-out List Parameters** panel, then use the **SETALL** command on the **Release Checkin *area* Components** panel, you can check out a large number of components without selecting each component individually from a long list.

When you are satisfied with your selections on the **Release Checkout *area* Components** panel, press **Enter** to process your selections.

7   After you select components for checkout, if the **Confirm Checkout** field is set to **Y** on the **RELEASE CHECK-OUT OPTIONS** panel (CMNCKO50), and if a component you selected for checkout is in another active package, the concurrent development warning panel (CMNCMPSW) is displayed.

```
CMNCMPSW                    History - ACPJCL10.JCL              Row 1 to 5 of 5
Command ===> _____  Scroll ===> CSR

This component is included in the following packages:

Package    Sta Promoted vv.mm Last action      Size  Procname User     Release
ACTP000041 DEV          02.00 2011/09/07 14:14 00669          USER42   R041127
ACTP000031 DEV          01.02 2010/12/29 13:57 00669          USERLE   R041030
ACTP000029 DEV          02.01 2008/08/19 07:53 00670          USER42
ACTP000019 DEV          02.00 2008/01/26 14:38 00663          USER42
ACTP000016 DEV LOCAL1   01.01 2008/06/17 11:39 00663          USER42   R041030
****************************** Bottom of data ******************************
```

If you decide to abandon checkout for a component, type **CANCEL** in the **Command** line and press **Enter**. If you want to check out the component, press **PF3** or **Enter**.

8   If there are problems with checkout for any selected component, the **Release Checkout Components Disallowed** panel is displayed.

```
CMNCKO53 Release CHECKOUT Components Disallowed        Row  000001 Of  000002
Command ===> _____ Scroll ===> CSR
  Component      Lib  Checked out to pkge  Package    User    Shared    Reason
_ ACPCTC10       CTC  2010-11-27-16.09.36  ACTP000131 USER239           DUPLIC
_ ACPJCL10       JCL  2010-11-27-16.18.43  ACTP000131 USER239           OVRLAY
****************************** Bottom of Data *******************************
```

This table describes the fields on the **Release Checkout Components Disallowed** panel.

Field	Description	
Command	Type a command, or leave Command blank to type a Line Command on a component.	
	CANCEL	Cancel panel without update. (Abbreviation: C)
	LOCATE *component*	Locate a component. (Abbreviation: L)
	SETALL	Sets all line commands to S to select all listed components.
	SETOFF	Sets all line commands to blank to deselect any selected components.
Line Command	Type **S** to override a checkout disallowed condition and process the component for checkout.	
Component	Displays the name of the disallowed component.	
Lib	Displays the library type of the disallowed component.	
Component checked out to pkge	Displays the date and time that the component was checked out to the target package.	
Package	Displays the name of the package that is the target for checkout.	

Field	Description
User	Displays the userid of the last person to change the component.
Shared	Displays Yes if the baseline library for the disallowed component is shared with other library types.
Reason	Displays the reason that the component was disallowed from checkout.

	ARELCK	The component is locked in area being checked out from by another user.
	BATCH	The component can only be checked out in batch.
	CKILCK	The component is locked in area being checked out from by another user for checkin processing.
	CONCHK	The component is already checked out to another planned package and application administration does not allow concurrent checkout.
	CONFLC	The component is already in the package under another person's TSO ID.
	DUPLIC	The component is already in the package in CHECKOUT status.
	HSTCHK	The component is checked out to another active package, and you decided on the concurrent development warning panel (CMNCMPSW) to abandon checkout for this component.
	LOCKED	The component is locked by another user.
	NO BUN	The Baseline Unique Number for the component library type is missing.
	NO MBR	The member does not exist in the area library.
	NOAUTH	You have no authority to check out the component.
	OVRLAY	The component is already in the package under your TSO ID.

You can override components disallowed from checkout if the reason is **OVRLAY** or **CONFLC**.

From the **Release Checkout Components Disallowed** panel, possible courses of action include.

- Type **CANCEL** on the Command line to abandon the checkout process and return to the **Release Check-Out Options** panel.

- Press **PF3** to return to the **Release Checkout *area* Components** panel to change your component selections for checkout.

- Press **Enter** to continue with checkout without processing the components displayed on the **Release Checkout Components Disallowed** panel.

- Type **S** in the line command for one or more components, or type command **SETALL** to select all components, to attempt an override of the disallowed condition. Press **Enter** to continue processing components for checkout, including the components you selected for override.

9 If ERO finds no conditions to disallow components, or if you decide to continue the checkout process from the **Release Checkout Components Disallowed** panel, checkout is executed.

If you specified **Long** in the **Report Format** field on the **Release Check-out Options** panel, the **Release Checkout Long Summary** panel is displayed. This

panel shows the status of the checkout process for every component selected for checkout and not disallowed.

```
CMNCKO57          Release CHECKOUT LONG Summary              Checkout Complete
Command ===> _____  Scroll ===> CSR

Component          Lib Release  Area    RC Checkout component status
ACPSRC1A           SRC FIN6420  ACCTPAY 00 CHECKOUT WAS COMPLETED
ACPSRS1B           SRS FIN6420  ACCTPAY 00 CHECKOUT WAS COMPLETED
ACPSRS1C           SRS FIN6420  ACCTPAY 00 CHECKOUT WAS COMPLETED
****************************** Bottom of Data ******************************
```

If you specified **Short** in the **Report Format** field on the **Release Check-out Options** panel, the **Release Checkout Short Summary** panel is displayed. This panel lists components where there was a problem in the checkout process. If there were no problems, the panel shows one row with name FOR ALL COMPONENTS representing all components requested for checkout and not disallowed.

```
CMNCKO57          Release CHECKOUT SHORT Summary             Checkout Complete
Command ===> _____  Scroll ===> CSR

Component          Lib Release  Area    RC Checkout component status
FOR ALL COMPONENTS  FIN6420  ACCTPAY   00 CHECKOUT WAS COMPLETED
****************************** Bottom of Data ******************************
```

> **NOTE** Check out like-source or like-linkcontrol components, but do not check out related components in target library types. Source-to-load relationships are not preserved in checkout from release area processing.

This table describes the fields on the **Checkout *package* Long Summary** panel.

Field	Description
Component	Displays the name of components that were requested for checkout.
Lib	Displays the library type of the component.
Release	Displays the name of the release area that the checkout was requested from.
Area	Displays the return code from the copy from release area library to staging library.
RC	Displays the return code from the Package Master file update.
Checkout component status	Displays status of the component in the checkout process.

Press **Enter** to leave the **Release Checkout Long/Short Summary** panel and return to the **Release Check-out Options** panel.

10 Press **PF3** twice to return to the *release* **- Release Package List** panel.

```
CMNRMPLF                  FIN6430 - Release Package List          Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

    Package    Sta  Area      Install DT/TM  Last Promotion      Aud Chkd In
 __ ACTP000032 DEV  ACCTPAY   20160429 2359  SERT6    S6P1IT  20         N
****************************** Bottom of data ******************************
```

Checkout from release is complete.

Checking-in a Package

Package check-in brings components from a package attached to a release into the starting subsystem area defined for that package. This step begins the integration of your package components with other release components that are in development in other change packages across the enterprise.

Package check-in accomplishes these objectives:

- Allocates area libraries for all areas in the release for the library types that are contained in the package.

- Populates starting release area libraries.

- Makes the components available to build processes in other packages in the same application that are attached to the release.

- Makes the components available to build processes in packages in other applications that have this application defined as a related application.

- Starts the process of resolving multiple versions of the same component that are in development at the same time and that will be installed at the same time.

> **NOTE** The base ChangeMan ZMF product encourages you to manage concurrent development by displaying checkout conflict messages and concurrent development messages. In contrast, ERO guarantees that a release will contain only one version of a component in an application by funneling all components through release area libraries that eventually converge in one set of libraries in the final system area.

Check-in package to area is subject to these rules and conditions.

- The target release and area for package check-in are predetermined. You define the release and starting area when you attach a package to a release.

- The check-in rule for the target area determines whether your package must be audited or approved before package check-in is allowed. The check-in rule can also restrict who can perform check-in to the target area.

- You can check-in all package components, or you can check-in selected package components.

- The library type of a package component must be defined to the application joined to the target release. Your ChangeMan ZMF administrator makes those definitions. If the library type is not defined in the joined application, check-in is skipped for those components.

- If a package component already exists in the target area library, you must explicitly override a "check-in components disallowed" condition to overlay the component.

- A component in an area library can only be overlaid by the person who checked in the component, and it can only be overlaid if it is checked in from the same package. This rule can be overridden in the definition of the target area.

- If a component that already exists in an area library cannot be overlaid, it must be retrieved before it can be checked in again.

- You cannot check-in a component that is locked under another TSO ID. However, a release manager can check-in components locked by others.

Follow these steps to check-in a package to the starting subsystem area for a release.

1 Follow these steps to access the package that you want to check-in.

    a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

    b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

    c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                  Row 1 to 2 of 2
Command ===> _____        Scroll ===> CSR

   Release  Sta  Install  Work request     Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE       USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE       USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have change packages attached to them.

    d On the **Release List** panel, type line command **PK** on a release row to select the release that contains the package you want to check-in. Press **Enter**, and then *release* **- Release Package List** panel is displayed.

```
CMNRMPLF              FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____      Scroll ===> CSR

   Package    Sta  Area     Install DT/TM  Last Promotion      Aud Chkd In
__ ACTP000032 DEV  ACCTPAY  20160429 2359  SERT6    S6P1IT  20         N
****************************** Bottom of data ******************************
```

The *release* **- Release Package List** panel shows all packages that are attached to the release that you selected.

The fields on the *release* **- Release Package List** panel are described on .

2 On the *release* **- Release Package List** panel, type **CI** in the line command of the package that you want to check-in, and press **Enter**. The **Release Check-in Options** panel is displayed.

```
CMNCKI00                  Release Checkin Options
Option ===> _____

        Package: ACTP000032     Release: FIN6430        Area: ACCTPAY

1  Package       Check-in components from package libraries
2  Package Parms  Check-in component list package selection criteria

Report Format . . . . . LONG  (Long/Short-errors only)

Enter "/" to select option
  _ Eligible components only
  _ Exclude Superseded
  _ Batch Check-in
  / Prompt for description
```

This table describes fields and options on the **Release Check-in Options** panel.

Field	Description
Package	Displays the package that you are checking-in from.
Release	Displays the release that you are checking-in to.
Area	Displays the starting subsystem area that you are copying package components into.
Options	Choose an option to display a list of components to select for check-in.
	1 Package — Display all package components on the **Release Checkin *package* Components** panel where you select components for check-in.
	2 Package Parms — Display the **Component Release Package Check-in List Parameters** panel where you specify package component filters, then display the filtered list on the **Release Checkin *package* Components** panel where you select components for check-in.
Report Format	Type an online report format for the results of the check-in process.
	Short — Only display components with check-in errors. (Abbreviation: S)
	Long — Display all components requested for check-in. (Abbreviation: L)
Eligible Components only	Omit to display all components in the package to be checked in.
	Select to display only components that are eligible for checkin, including overlays that may be overridden.
Exclude Superseded	This option is enabled only if **Eligible Components** is set to **Yes**,
	NO — Display only components that are eligible for checkin, including overlays that may be overridden.
	YES — Display only components that are eligible for checkin, including overlays that may be overridden, but exclude any overlay by a component with a newer last staged date, regardless of the hash token, SETSSI, user ID, or originating package.
Batch Check-in	Select this field to create batch JCL and submit a job to run in batch to free your terminal while check-in is processing.
Prompt for description	Select this field if you want to display the **Checkin from *package* Descriptions** (CMNCKI20) panel to enter a description for the components that you are checking into the area.

3 Choose one of the **Options** on the **Release Check-in Options** panel and press **Enter**.

If you chose option **1 Package**, the **Release Checkin *package* Components** panel is displayed. The panel lists all components in the package or all eligible components depending on your entry in the **Eligible Components** field.

If you chose option **2 Package Parms**, the **Component Release Package Check-in List Parameters** panel is displayed, where you to specify package component selection criteria. After you have typed your selection criteria, press **Enter** to display the **Release Checkin *package* Components** panel. The panel lists only the selected package components.

```
CMNCKI02  RELEASE CHECKIN ACTP000038 Components        Row  000001 Of  000009
Command ===> _____      Scroll ===> CSR

  Component        Type  Status  Changed          Procname User       Area
_ ACPJCL10         JCL   ACTIVE  20160331 165939            USER239    ACCTPAY
_ ACPPRC10         PRC   ACTIVE  20160331 165956            USER239    ACCTPAY
_ ACPSRC1A         SRC   ACTIVE  20160331 170321 CMNCOB2    USER239    ACCTPAY
_ ACPSRC2A         SRC   ACTIVE  20101128 081311 CMNCOB2    USER239    ACCTPAY
_ ACPSRC30         LCT   ACTIVE  20101128 102049            USER239    ACCTPAY
_ ACPSRC30         LOS   ACTIVE  20101128 102143 CMNCOB2    USER239    ACCTPAY
_ ACPSRC99         SRC   ACTIVE  20101128 095418 CMNCOB2    USER239    ACCTPAY
_ ACPSRS1B         SRS   ACTIVE  20160331 170059 CMNCOB2    USER239    ACCTPAY
_ ACPSRS1C         SRS   ACTIVE  20160331 170134 CMNCOB2    USER239    ACCTPAY
****************************** Bottom of Data ******************************
```

This table describes the fields on the **Release Checkin *package* Components** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *component* — Locate a component. (Abbreviation: L)
	SETALL — Sets all line commands to S to select all listed components.
	SETOFF — Sets all line commands to blank to deselect any selected components.
Line Command	Type S to select a component for check-in.
Component	Displays the component name.
Type	Displays the component library type.
Status	Displays the current component status.
Changed	Displays the date and time that the component was last changed.
Procname	Displays the stage procedure name for a Like-Source component.
User	Displays the userid of the person who last changed the package component.
Area	Displays the target check-in area.

Type **S** on the line command for components you want to check-in, or use the **SETALL** command to select all listed components.

NOTE If you filter the list of package components with selection criteria on the **Component Release Package Check-in List Parameters** panel, then use the **SETALL** command on the **Release Checkin *package* Components** panel, you can check-in a large number of components without selecting each component individually from a long list.

4 When you are satisfied with your selections on the **Release Checkin *package* Components** panel, press **Enter** to process your selections.

5 If there are problems with check-in for any selected component, the **Release Checkin Components Disallowed** panel is displayed.

```
CMNCKI03 RELEASE CHECKIN COMPONENTS Disallowed        Row  000001 Of  000003
Command ===>                                              Scroll ===> CSR

  Component       Type Checked in to area   Orig. pkg  User     Shared Reason
_ ACPJCL10        JCL  2010-11-28-07.24.43  ACTP000039 USER239         OVERLAY
_ ACPPRC10        PRC  2010-11-28-07.24.43  ACTP000039 USER239         OVERLAY
_ ACPSRC2A        SRC  2010-11-28-07.24.43  ACTP000039 USER239         SRC CIM
****************************** Bottom of Data ******************************
```

This panel shows problems that ERO detected with components you selected for check-in.

This table describes the fields on the **Release Checkin Components Disallowed** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a component.
	CANCEL — Cancel panel without update. (Abbreviation: C)
	LOCATE *component* — Locate a component. (Abbreviation: L)
	SETALL — Sets all line commands to S to select all listed components.
	SETOFF — Sets all line commands to blank to deselect any selected components.
Line Command	Type **S** to override a check-in disallowed condition and process the component for check-in.
Component	Displays the name of the disallowed component.
Type	Displays the library type of the disallowed component.
Checked in to area	Displays the date and time that the component now in the target area library was originally checked in.
Orig. pkg	Displays the name of the package that contains the component now in the target area library.
User	Displays the userid of the last person to change the component.
Shared	Displays Yes if the baseline library for the disallowed component is shared with other library types.

Field	Description	
Reason	Displays the reason that the component was disallowed from check-in.	
	OVERLAY	The component has already been checked in into the area.
	NO AUTH	You have no authority to check in the component.
	NO BUN	The Baseline Unique Number for the component library type is missing. Usually, the library type is not defined in this application in ERO.
	NO MBR	The component has no corresponding member in the package staging library.
	PKGLOCK	The component is locked in the staging library by another user.
	AREALCK	All components in the area are locked while area component locks are being applied for checkin or retrieve by another user. Area locks are removed when all area component locks are applied.
	CKILOCK	The component is locked in the area until checkin or retrieve completes for another user.
	SRC CIM	Recompile/relink component will overlay a source component. You must check out the source and stage the component.

You can override components disallowed from checkin if the reason is **OVERLAY** and one of these is true:

- You are checking in the component from the same package with the same TSO ID that checked in the component previously.

- Your release manager set an indicator in the release area definition that allows check-in overlay by components from different packages and different TSO IDs.

From the **Release Checkin Components Disallowed** panel, possible courses of action include.

- Type **CANCEL** on the Command line to abandon the check-in process and return to the **Release Check-In Options** panel.

- Press **PF3** to return to the **Release Checkin *package* Components** panel to change your component selections for check-in.

- Press **Enter** to continue with check-in without processing the components displayed on the **Release Checkin Components Disallowed** panel.

- Type **S** in the line command for one or more components to attempt an override of the overlay condition. You can use **SETALL** and **Enter** to select all disallowed components. Press **Enter** to continue processing components for check-in, including the components you selected for override.

6 If you specified YES in the Descriptions field on the **Release Check-in Options** (CMNCKI00) panel, the **Checkin from** *package* **Descriptions** (CMNCKI20) panel is displayed:

```
CMNCKI20            Check-in from ACTP000038 - Descriptions  Row 1 to 7 of 15
Command ===> _____  Scroll ===> CSR

 Line Command: S-Select          ( SETALL Select all, SETOFF De-select all )

  Default:   Default description to apply to all components_____
          _____


  COMPONENT     DESCRIPTION
_ ACPCTC10 CTC  Override the default description for this component_____
              _____
_ ACPSRC30 LCT  _____
              _____
_ ACPSRC30 LOD  _____
              _____
_ ACPSRC30 LOS  _____
              _____
_ ACPSRC30 LST  _____
              _____
_ ACPSRC50 LCT  _____
              _____
_ ACPSRC50 LOD  _____
              _____
```

This panel displays all of the components that you have selected to check into the target area. You can enter up to 120 characters as a description for each component on this panel, as follows:

- The description you enter in the **Default** field applies to all components that you select by entering the letter S in the line command field that precedes the component name. Enter the SETALL command to select all components that are listed. (Enter the SETOFF command to deselect all selected components.) (The default description given in this example is "Default description to apply to all components."

- If you want to override the default description for one or more components, enter the desired description for the component in the **Description** field to the right of the component name. In this example, you override the default description for component ACPCTL10 and type the description "Override the default description for this component" instead. Note that the default description will apply to component ACPJCL10 in this example.

- Press PF3 to assign the description and exit the panel. (The description for each component, if any, is written to the CIM$DESC field of the Components In Motion table and to the RHS$DESC field of the History table.)

7 If ERO finds no conditions to disallow components, or if you decide to continue the check-in process from the **Release Checkin Components Disallowed** panel, check-in is executed.

8 If all release area libraries have not been allocated previously for the component types you are checking in, for the package application you are checking in from, for all areas in the chain of areas from the starting area to the final area, then those area libraries are allocated here. The **Release Checkin Libraries Allocated** panel shows

all area libraries for the library type/application, including the ones that are allocated here and libraries that were allocated previously.

```
CMNCKI05        Release CHECKIN LIBRARIES ALLOCATED      Row  000001 Of  000018
Command ===> _____    Scroll ===> CSR

 Application: ACTP

 Dataset name                                   Type  Like-type       Status
 CMNTP.FIN6430.ACCTPAY.ACTP.CTC                 CTC   PDS             EXISTING
 CMNTP.FIN6430.FINANCE.ACTP.CTC                 CTC   PDS             EXISTING
 CMNTP.FIN6430.GENLEDGR.ACTP.CTC                CTC   PDS             EXISTING
 CMNTP.FIN6430.ACCTPAY.ACTP.LCT                 LCT   LINK-EDIT CNTL  RC = 0000
 CMNTP.FIN6430.FINANCE.ACTP.LCT                 LCT   LINK-EDIT CNTL  RC = 0000
 CMNTP.FIN6430.GENLEDGR.ACTP.LCT                LCT   LINK-EDIT CNTL  RC = 0000
 CMNTP.FIN6430.ACCTPAY.ACTP.LOD                 LOD   LOAD MODULE     EXISTING
 CMNTP.FIN6430.FINANCE.ACTP.LOD                 LOD   LOAD MODULE     EXISTING
 CMNTP.FIN6430.GENLEDGR.ACTP.LOD                LOD   LOAD MODULE     EXISTING
 CMNTP.FIN6430.ACCTPAY.ACTP.LOS                 LOS   NCAL LOAD       EXISTING
 CMNTP.FIN6430.FINANCE.ACTP.LOS                 LOS   NCAL LOAD       EXISTING
 CMNTP.FIN6430.GENLEDGR.ACTP.LOS                LOS   NCAL LOAD       EXISTING
 CMNTP.FIN6430.ACCTPAY.ACTP.LST                 LST   LISTING         EXISTING
 CMNTP.FIN6430.FINANCE.ACTP.LST                 LST   LISTING         EXISTING
 CMNTP.FIN6430.GENLEDGR.ACTP.LST                LST   LISTING         EXISTING
 CMNTP.FIN6430.ACCTPAY.ACTP.SRS                 SRS   SOURCE          EXISTING
 CMNTP.FIN6430.FINANCE.ACTP.SRS                 SRS   SOURCE          EXISTING
 CMNTP.FIN6430.GENLEDGR.ACTP.SRS                SRS   SOURCE          EXISTING
******************************* Bottom of Data ********************************
```

Press Enter to continue the check-in process.

If you specified **Long** in the **Report Format** field on the **Release Check-in Options** panel, the **Checkin *package* to *area* Long Summary** panel is displayed. This panel shows the status of the check-in process for every component selected for check-in and not disallowed.

```
CMNCKI07 KIN ACTP000038 to ACCTPAY LONG Summary             Checkin Complete
Command ===>                                                SCROLL ===> CSR

Release        Lib   Release  Area     CIM    History Release area check-in
Component      type  area     copy     table  table    component status
ACPSRC1A       LOD   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC1A       LST   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC1A       SRC   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30       LCT   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30       LOD   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30       LOS   ACCTPAY  Recomp. RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC30       LST   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC99       LOD   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC99       LST   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRC99       SRC   ACCTPAY  Recomp. RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRS1B       LOS   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRS1B       LST   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRS1B       SRS   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRS1C       LOS   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRS1C       LST   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
ACPSRS1C       SRS   ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
****************************** Bottom of Data ********************************
```

If you specified **Short** in the **Report Format** field on the **Release Check-in Options** panel, the **Checkin *package* to *area* Short Summary** panel is displayed. This panel

lists components where there was a problem in the check-in process. If there were no problems, the panel shows a summary line FOR ALL COMPONENTS.

```
CMNCKI07 KIN ACTP000038 to ACCTPAY SHORT Summary              Checkin Complete
Command ===>                                                  SCROLL ===> CSR


Release          Lib   Release   Area    CIM   History Release area check-in
Component        type  area      copy    table  table   component status
FOR ALL COMPONENTS    ACCTPAY  RC=0000 RC=0000 RC=0000 CHECKIN WAS COMPLETED
***************************** Bottom of Data ******************************
```

NOTE If you select like-source components for check-in, package components with a source-to-load relationship to the selected components are also checked-in.

This table describes the fields on the **Checkin *package* Long Summary** panel.

Field	Description
Release Component	Displays the name of package components that were requested for checkin.
Lib type	Displays the library type of the component.
Release area	Displays the name of the release area that is the target for checkin.
Area copy	Displays the return code from the copy from staging library to release area library.
CIM table	Displays the return code from the component-in-motion table update.
History table	Displays the return code from the history table update.
Release area check-in component status	Displays status of the component in the check-in process.

9 Press **PF3** to return to the ***release* - Release Package List** panel, which now displays **Y** in the Checked In column for the package you checked in.

```
CMNRMPLF                 FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____        Scroll ===> CSR

   Package    Sta  Area      Install DT/TM  Last Promotion      Aud Chkd In
__ ACTP000032 DEV  ACCTPAY   20160429 2359  SERT6    S6P1IT     00      Y
__ ACTP000038 DEV  ACCTPAY   20160429 2359  SERT6    S6P1IT     00      Y
***************************** Bottom of data ******************************
```

Package check-in is complete.

Retrieving a Package

The retrieve package function removes all package components from the libraries for an area.

You must remove package components from area libraries to:

■ Detach a package from a release.

■ Check in new versions of all package components from a different package.

> **NOTE** You cannot edit components in an area library. Even after your package is attached to a release and components are checked in, you change those components in the package staging libraries using ChangeMan ZMF base functions. You change a component in an area library by checking in a new version to the area. Unless you were the last person to check in a component from the same package, you must retrieve the component from the area before checking in a new version.

Package retrieve is subject to these rules and conditions:

■ The retrieve rule for the area determines whether you can retrieve components from the area if the area is blocked. The retrieve rule can also restrict who can perform retrieve from the area.

■ Package retrieve removes all package components from the area. If you want to remove selected package components from the area, use the area retrieve function. See "Retrieving from an Area" on page 173.

■ Package retrieve only removes those components that originated in your package. Components in area libraries that originated in other change packages are not removed, even if you have components with the same name in your package.

■ If you attempt to use package retrieve after the area retrieve function was used to remove all of your package components from an area, an error message is issued. However, the package checked in indicator is reset, and no problems will result.

Follow these steps to retrieve a package from one or more release areas:

1 Follow these steps to access the package that you want to retrieve.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel is displayed.

```
CMNRMRLF                         Release List                     Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release   Sta  Install   Work request      Dept      Aud  Creator  Pkgs
__ FIN6410   DEV  20160328  WR 9010           FINANCE        USER015  00001
__ FIN6430   DEV  20160328  WR 9030           FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

• Satisfy the selection criteria you typed on the **Release List Parameters** panel.

• Have change packages attached to them.

d On the **Release List** panel, type line command **PK** on a release row to select the release that contains the package you want to retrieve. Press **Enter**, and the *release* **- Release Package List** panel is displayed.

```
CMNRMPLF              FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____        Scroll ===> CSR

    Package    Sta  Area     Install DT/TM  Last Promotion      Aud Chkd In
__  ACTP000032 DEV  ACCTPAY  20160429 2359  SERT6    S6P1IT  00          Y
__  ACTP000038 DEV  ACCTPAY  20160429 2359  SERT6    S6P1IT  00          Y
***************************** Bottom of data ******************************
```

The *release* **- Release Package List** panel shows all packages that are attached to the release that you selected.

The fields on the *release* **- Release Package List** panel are described on .

2 On the *release* **- Release Package List** panel, type **RP** in the line command of the package that you want to retrieve, and press **Enter**. If the target package has many components, you can type RB (Retrieve Batch) in the line command of the package that you want to retrieve and press Enter. (RB will submit a batch job to retrieve package components, which frees your terminal so that you can perform other functions while the retrieve option is being performed.)

Regardless of whether you type the RP or RB line command, the *package* **Area List With Components** panel is displayed.

```
CMNRMPAR            ACTP000038 Area List With Components   Row 1 to 1 of 1
Command ===> _____        Scroll ===> CSR

    Area                Status             Area  Prior    Next
    Name   Type  Aud   BLK CIA COA CIR COR step  area     area
_   ACCTPAY  0          N   Y   N   N   N  0001           FINANCE
***************************** Bottom of data ******************************
```

This panel lists release areas that contain components from your package. In this example, the package was checked into the starting area, but that area was not checked in to its next area. By the end of the release life cycle, the *package* **Area List With Components** panel displays the entire chain of areas from the starting area to the final release area.

This table describes the fields on the *package* **Area List With Components** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an area.
	CANCEL Cancel panel without update. (Abbreviation: C)
	LOCATE Locate an area. (Abbreviation: L) *area*
	REFRESH Refresh the panel display from system files and tables. (Abbreviation: R)
Line Command	Type S to select a release area to remove package components from.
Area Name	Displays the area name

Field	Description
Area Type	Displays the area type code. 0　　Subsystem area 1　　System area
Area Aud	Displays the return code of the last release audit run on this area.
Status BLK	Displays Y if the release area is blocked.
Status CIA	Displays Y if all check-in approvers have entered their approval.
Status COA	Displays Y if all check-off approvers have entered their approval.
Status CIR	Displays Y if at least one check-in approver has entered a reject.
Status COR	Displays Y if at least one check-off approver has entered a reject.
Area Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Prior Area	Displays the prior area specified in the area definition.
Next Area	Displays the next area specified in the area definition.

3　On the ***package* Area List With Components** panel, type **S** in the line command for an area row to retrieve your package components from that area. You can select multiple areas for package retrieve. Press **Enter** to process your request.

If you selected the RB (Retrieve Batch) function, the Submit Batch Retrieve (CMNRTV70) panel is displayed. Enter a valid JOB statement and press Enter to submit the job. The release retrieve summary is written to the SYSPRINT output dataset.

> **NOTE** The batch retrieve function calls exit CMNEX220 for post-retrieve processing. Refer to the *ChangeMan ZMF Customization Guide* for information about this exit.

If you selected the RP (Retrieve Package) function, the **Release Retrieve Summary** panel is displayed.

```
CMNRTV57   Release RETRIEVE LONG Summary                   Retrieve Complete
Command ===> _____        Scroll ===> CSR
Release          Lib   Release   Area      CIM     History Release area retrieve
component        type   area    delete    table    table    component status
ACPSRC1A         LOD   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC1A         LST   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC1A         SRC   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30         LCT   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30         LOD   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30         LOS   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC30         LST   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC99         LOD   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC99         LST   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRC99         SRC   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRS1B         LOS   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRS1B         LST   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRS1B         SRS   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRS1C         LOS   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRS1C         LST   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
ACPSRS1C         SRS   ACCTPAY  RC=0000 RC=0000 RC=0000 RETRIEVE WAS COMPLETED
****************************** Bottom of Data ******************************
```

This table describes the fields on the **Release Retrieve Summary** panel.

Field	Description
Release component	Displays the name of package components that are retrieved from release area libraries.
Lib type	Displays the library type of the retrieved component.
Release area	Displays the name of the release area that the component is retrieved from
Area delete	Displays the return code from the delete from release area library.
CIM table	Displays the return code from the component-in-motion table update.
History table	Displays the return code from the history table update.
Release area retrieve component status	Displays retrieve status of the component in the target area.

4 Press **Enter** then press **PF3** to return to the *release* **- Release Package List** panel, which now displays **N** in the Checked In column for the package you retrieved.

```
CMNRMPLF                 FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

    Package     Sta  Area     Install DT/TM  Last Promotion      Aud Chkd In
__  ACTP000032  DEV  ACCTPAY  20160429 2359  SERT6    S6P1IT  00         N
__  ACTP000038  DEV  ACCTPAY  20160429 2359  SERT6    S6P1IT  00         N
****************************** Bottom of data ******************************
```

Package retrieve is complete.

Recompiling Source Components

When you attach a package to a release, you can recompile like-source components residing in area libraries in your release, in area libraries in prior releases, or in baseline libraries. You can also recompile from promotion libraries.

You can let ERO search for the latest version of the component in area libraries and baseline. See "Searching Area Libraries for Latest" on page 228 for information on latest versions in ERO.

When a component is recompiled into a package attached to a release, the recompile SYSLIB DD statements include release area libraries that fit the rules that are specified in release administration.

Follow these steps to recompile like-source components into a package attached to a release. This example shows an online recompile process.

1 Follow these steps to access the package that you want to recompile into.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install   Work request     Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have change packages attached to them.

   d On the **Release List** panel, type line command **PK** on a release row to select the release that contains the package you want to recompile into. Press **Enter**, and the *release* **- Release Package List** panel is displayed.

```
CMNRMPLF              FIN6430 - Release Package List        Row 1 to 1 of 1
Command ===> _____ Scroll ===> CSR

   Package     Sta  Area     Install DT/TM  Last Promotion      Aud Chkd In
__ ACTP000032  DEV  ACCTPAY  20160429 2359  SERT6     S6P1IT    00       N
__ ACTP000038  DEV  ACCTPAY  20160429 2359  SERT6     S6P1IT    00       N
****************************** Bottom of data ******************************
```

The *release* **- Release Package List** panel shows all packages that are attached to the release that you selected.

The fields on the *release* **- Release Package List** panel are described on .

2 On the *release* **- Release Package List** panel, type **RC** in the line command of the package that you want to recompile into, and press **Enter**. The **Recompile Source** panel is displayed.

```
CMNRCMPR                       Recompile Source
Option ===> _____

   blank Member selection list          L List libraries containing component

Package . . . . . . . . . ACTP000038
Component name  . . . . . ACPSRC99                                          +
Source library type . . . SRC        (Blank for list)
Library level . . . . . . 1          (Baseline 0, Promotion 1 to nn)
Recompile mode  . . . . . 2          (1-Online, 2-Batch)

Enter "/" to select option
  / Search release areas
  / Specify release areas
```

This table describes the fields on the **Recompile Source** panel.

Field	Description
Option	Type **L** to display the *component - type* **Library List** panel that shows baseline, promotion, and area libraries that contain the component specified in the **Component Name** and **Library Type** fields. You cannot use a pattern in the **Component Name** field if you use this option.
Package	Displays the package ID of the change package you are recompiling into.
Component name	Type the name of the component you want to recompile. Other options: Pattern — Build and display a filtered list of components from the origin library. You can select components to recompile from the list. **Note:** Do not type * by itself unless you want to recompile all components in the library. Blank — Display a list of all components in the origin library. You can select components to recompile from the list. * — Recompile all components in the library.
Source library type	Type the library type of the components you want to recompile. Leave this field blank to display a list of library types to select from.
Library level	Type an integer to indicate the baseline version or promotion level where you want to get the source to recompile. **Note:** If you type Y in **Search Release Areas** below, the contents of this field is ignored. 0 — Recompile from the current or 0 level baseline library. 1 to 99 — Integers from 1 to 99 mean recompile a future version in a promotion library. The integers are level numbers in a promotion site/level. If there are multiple promotion sites with the level number you specify, the **Promotion Library Selection List** panel is displayed, where you select one of the listed promotion libraries. Blank — You can leave this field blank if you type **L** in the **Option** field. If you type **L** in the **Option** field, the *component - type* **Library List** panel is displayed that shows you the baseline and promotion libraries that contain the component specified in the **Component Name** and **Source Library Type** fields. You can select a library on this list to check out from regardless of the version or level that you specified in the **Library Level** field.
Recompile mode	Type 1 or 2 to determine whether recompile is performed online with your terminal locked or in a batch job. 1 — Recompile components online. 2 — Recompile components in batch mode.
Search release areas	Used to determine whether release area libraries are included in the search for the component you want to recompile. Select to recompile from area libraries or baseline. Omit to recompile from area promotion libraries or baseline.

Field	Description
Specify release area	Used to determine whether recompile will display a library selection list.
	Select to display a selection list of area libraries and baseline that might contain the component(s) you want to recompile.
	Automatically search for latest.

Type your entries on the **Recompile Source** panel, selecting option **1-Online** for **Recompile Mode**, and press **Enter**.

3 The next steps in the recompile process depend on the location of the source that is recompiled into your package. The location of the source depends on your settings for fields **Search Release Areas** and **Specify Release Area** on the **Recompile Source** panel as indicated in this table.

Search Rel. Areas	Specify Rel. Area	Location of Source for Recompile / Next Steps
Not selected	Selected or not	ERO recompiles source from a promotion or baseline library depending on the **Library Level** field setting. The next steps depend on what you specified in the **Component Name** field:
		Blank or pattern — **Recompile From - *library*** panel (CMNRCMP2). See Step 6 on page 268.
		Full name — Standard recompile process. See Step 7 on page 269.
Selected	Not selected	ERO automatically finds the latest version of the component in area libraries and baseline. The next steps depend on what you specified in the **Component Name** field:
		Blank or pattern — **Recompile From - Consolidated Release Libraries** panel (CMNRCMP2). See Step 4 on page 267.
		Full name — Standard recompile process. See Step 7 on page 269.
Selected	Selected	ERO displays a selection list of area libraries and baseline that might contain the component you want to recompile. You select the release area library or baseline. The next steps depend on what you specified in the **Component Name** field:
		Blank or pattern — **Release Library Selection List** panel (CMNLBLS3). See Step 5 on page 267.
		Full name — **Release Library Selection List** panel (CMNLBLS3). See Step 5 on page 267.

4   This is an example of the **Recompile From - Consolidated Release Libraries** panel (CMNRCMP2). This panel lists the latest version of components matching the library type specified on the **Recompile Source** panel in prior releases and baseline.

```
 CMNRCMP2                    Recompile Member List              Row 1 to 14 of 14
 Command ===> _____  Scroll ===> CSR
                                                                          ID
 Input library:
 CMNTP.S4.V710.BASE.ACTP.SRC

 Name      Function vv.mm Created     Changed              Size   Init User
 _ ACPSRCD1          02.01 2002/05/07 2010/07/15 17:54       51     15 USER239
 _ ACPSRC1A          03.01 2002/05/07 2010/11/27 16:21       30     23 USER239
 _ ACPSRC2A          02.01 2010/07/14 2010/08/04 16:31       25     24 USER240
 _ ACPSRC80          01.03 2002/05/07 2010/08/05 13:45       22      1 USER240
 _ ACPSRC90          02.01 2002/05/07 2010/08/05 14:21       23      1 USER240
 _ ACPSRC91          02.01 2002/05/07 2010/08/05 14:21       23     15 USER240
 _ ACPSRC92          02.01 2002/05/07 2010/08/05 14:22       23     15 USER240
 _ ACPSRC93          01.01 2002/05/07 2010/07/15 11:56       22     15 USER239
 _ ACPSRC94          01.01 2002/05/07 2010/07/15 11:56       22      1 USER239
 _ ACPSRC95          01.01 2002/05/07 2010/07/15 11:56       22     15 USER239
 _ ACPSRC96          01.01 2002/05/07 2010/07/15 11:56       22     15 USER239
 _ ACPSRC97          01.01 2002/05/07 2010/07/15 11:56       22     15 USER239
 _ ACPSRC98          01.01 2002/05/07 2010/07/15 11:56       22     15 USER239
 _ ACPSRC99          02.01 2002/05/07 2010/11/28 09:36       24      1 USER239
******************************* Bottom of data *******************************
```

Select one or more components on the **Recompile From - Consolidated Release Libraries** panel for recompile into your release package.

> **NOTE** The name of the release area library or baseline library containing the latest component version listed on the **Recompile From - Consolidated Release Libraries** panel is not displayed until you get to the **Online Recompile Job Information** panel (CMNRCMP1).

When you make your member selection on this panel and press **Enter**, the standard recompile process is invoked. See .

5   This is an example of the **Release Library Selection List** panel (CMNLBLS3).

```
CMNLBLS3                 Release Library Selection List        Row 1 to 7 of 7
Command ===> _____  Scroll ===> CSR

       Package: ACTP000038   Status: DEV   Install date: 20160418

 Library type: SRC

 Dataset                                    +  Release      Area
 _ CMNTP.FIN6410.ACCTPAY.ACTP.SRC              FIN6410      ACCTPAY
 _ CMNTP.FIN6410.GENLEDGR.ACTP.SRC             FIN6410      GENLEDGR
 _ CMNTP.FIN6410.FINANCE.ACTP.SRC              FIN6410      FINANCE
 _ CMNTP.FIN6420.ACCTPAY.ACTP.SRC              FIN6420      ACCTPAY
 _ CMNTP.FIN6420.GENLEDGR.ACTP.SRC             FIN6420      GENLEDGR
 _ CMNTP.FIN6420.FINANCE.ACTP.SRC              FIN6420      FINANCE
 _ CMNTP.S4.V710.BASE.ACTP.SRC                 BASELINE
****************************** Bottom of data ******************************
```

This table describes the fields on the **Release Library Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an dataset.
	CANCEL Cancel panel without action. (Abbreviation: C)
	REFRESH Refresh the panel display from data stores. (Abbreviation: R)
Package	Displays the change package ID.
Status	Displays the package status.
Install date	Displays the package install From date.
Line Command	S (Select) is the only valid line command code.
Dataset	Displays area library names for the specified library type. **Note:** Area libraries from prior releases are listed.
Release	Displays the release ID for the area library, or displays BASELINE for the baseline library.
Area	Displays the release area name for the area library, or displays blank for the baseline library.

NOTE Libraries listed on the the **Release Library Selection List** panel match the library type you specified on the Recompile Source panel, but they may not contain the component you want or any components at all.

If you specified a full **Component Name** on the **Recompile Source** panel, and the specified component is in the library you selected on the **Release Library Selection List** panel, the next step is the standard recompile process. See .

If you did not specify a full **Component Name** on the **Recompile Source** panel, the next panel that is displayed is the **Recompile From:** *library* panel (CMNRCMP2), which is described in the next step.

6   This is an example of the **Recompile From:** *library* panel (CMNRCMP2).

```
CMNRCMP2                  Recompile Member List                Row 1 to 14 of 14
Command ===> _____ Scroll ===> CSR
                                                                         ID
  Input library:
  CMNTP.S4.V710.BASE.ACTP.SRC

  Name      Function vv.mm Created     Changed              Size  Init User
_ ACPSRCD1           02.01 2002/05/07 2010/07/15 17:54        51    15 USER239
_ ACPSRC1A           03.01 2002/05/07 2010/11/27 16:21        30    23 USER239
_ ACPSRC2A           02.01 2010/07/14 2010/08/04 16:31        25    24 USER240
_ ACPSRC80           01.03 2002/05/07 2010/08/05 13:45        22     1 USER240
_ ACPSRC90           02.01 2002/05/07 2010/08/05 14:21        23     1 USER240
_ ACPSRC91           02.01 2002/05/07 2010/08/05 14:21        23    15 USER240
_ ACPSRC92           02.01 2002/05/07 2010/08/05 14:22        23    15 USER240
_ ACPSRC93           01.01 2002/05/07 2010/07/15 11:56        22    15 USER239
_ ACPSRC94           01.01 2002/05/07 2010/07/15 11:56        22     1 USER239
_ ACPSRC95           01.01 2002/05/07 2010/07/15 11:56        22    15 USER239
_ ACPSRC96           01.01 2002/05/07 2010/07/15 11:56        22    15 USER239
_ ACPSRC97           01.01 2002/05/07 2010/07/15 11:56        22    15 USER239
_ ACPSRC98           01.01 2002/05/07 2010/07/15 11:56        22    15 USER239
_ ACPSRC99           02.01 2002/05/07 2010/11/28 09:36        24     1 USER239
****************************** Bottom of data ******************************
```

This table describes the commands and line commands you can use on the **Recompile From:** *library* panel.

Field	Description
COMMAND	Type one of the following commands, or leave the command line blank and type a line command next to a component name.
	REFRESH — Display updated information on this panel. Abbreviation: R
	SORT *heading* — Sort listed components by information under the specified column heading. Abbreviation: SO
	LOCATE *member* — Locate a component by information in the last sorted column or by Name if the components were not sorted. Abbreviation: L
	LONG — Display additional component information on a second line.
	SHORT — Suppress the additional component information displayed with the LONG command.
	CANCEL — Cancel the function and return to the previous panel. Abbreviation: C
	BROWSE *member* — Browse the specified component in the selected library. Abbreviation: B
	SELECT *member* — Select the specified component for recompile. Abbreviation: S
	HISTORY *member* — Display component history for the specified component. Abbreviation: H
Line Command	Type a line command to the left of the Name row:
	S — Select the component for recompile processing.
	B — Browse the component in the baseline library.
	H — Display component history.

When you make your member selection on this panel and press **Enter**, the standard recompile process is invoked, which continues in the next step.

7 If you choose a component for recompile that is in another active change package, **Component Warning** panel is displayed.

```
CMNCMPSW                    History - ACPSRC99.SRC                Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

This component is included in the following packages:

Package     Sta Promoted vv.mm Last action       Size  Procname User    Release
ACTP000037 DEV          02.01 2010/11/28 08:28 00024 CMNCOB2  USER239 FIN6420
ACTP000036 DEV          02.01 2010/11/28 09:37 00024 CMNCOB2  USER239 FIN6410
***************************** Bottom of data *****************************
```

This panel lists the other packages that contain the component that you want to recompile. Make sure that you are coordinating your work with the other developers who have checked out or staged the component into their packages.

If you want to abandon the recompile for this component, type **CANCEL** in the **Command** line and press **Enter**. Otherwise, press **Enter** to recompile the component.

8 If you continue the recompile process, the **Confirm Recompile Request** panel is displayed.

```
CMNRCMPC                     Confirm RECOMPILE Request
Command ===> _____

Package:          ACTP000038
Component name:    ACPSRC99                                        +
        type:     SRC
Language:         COBOL2
Changed Date:     20160328
       Time:      10250
Procedure:        CMNCOB2
User:             USER239
RELEASE           FIN6410
Area:             ACCTPAY
```

If you want to abandon the recompile for this component, type **CANCEL** in the **Command** line and press **Enter**. Otherwise, press **Enter** to recompile the component.

9 If you continue the recompile process, the **Online Recompile Job Information** panel is displayed.

```
CMNRCMP1              ONLINE Recompile Job Information      HISTORY ASSUMED
Command ===> _____

       Package: ACTP000038     Status: DEV     Install date: 20160418

Component:        ACPSRC99                                          +
Library type:     SRC - Source for Programs to be Linked Executable
Dataset name:     CMNTP.FIN6410.ACCTPAY.ACTP.SRC                    +

Language . . . . . . . COBOL2   (Blank for list)
Compile procedure  . . CMNCOB2  (Blank for list; ? for designated procedure)
Compile parms  . . . . _____
Pgm binder parms . . . _____

Enter "/" to select option
  _ Db2 precompile
  _ Precompile variables
  _ Display Other Options
    Suppress batch messages

 Job statement information:
    //USER239K JOB (X170,374),'SRECOMP',_____
    //         CLASS=A,MSGCLASS=Y_____
    //*_____
    //*_____
```

This table describes the fields on the Online Recompile Job Information panel.

Field	Description
Component	Displays the name of the component being recompiled.
Library type	Displays the component library type and library type description.
Dataset name	Displays the name of the library you are recompiling from.

Field	Description
	If there is a **designated procedure** for the component being recompiled, and the **Force Level** in that procedure is **2**, then the fields on the **Online Recompile Job Information** panel are presented in display mode. If the **Force Level** of the **designated procedure** is 1, you can restore the fields on this panel to the values required for freeze by typing ? in the Compile Procedure field.
Language	Type the source language. If you leave the **Language** field blank, the **Language Selection List** is displayed when you press **Enter**. If the **Language** field contains information when the panel is first displayed, the short ISPF message in the upper right corner of the panel tells you where the language was obtained: HISTORY ASSUMED — Obtained from component history. DESIGNATED ENFORCED — Obtained from a designated procedure. PRIOR ASSUMED — Obtained from a prior use of this panel for another component during your current ChangeMan ZMF session.
Compile procedure	Type the compile procedure to be used to recompile the component. Compile procedures are members in the ChangeMan ZMF skeleton library that are processed by ISPF file tailoring to create stage JCL. If you leave the **Compile Procedure** blank, but there is only one compile procedure defined for the specified language, the **Compile Procedure** field is filled automatically when you press **Enter**. If you leave the **Compile Procedure** field blank, and if there are multiple compile procedures defined in administration for the specified language, the **Compile Procedure Selection List** panel is displayed when you press **Enter**. Type ? to restore **Language**, **Compile Procedure**, **Compile Parms**, B**inder Parms**, **Db2 Precompile**, and **User Options** from a d**esignated procedure** with **Force Level 1**.
Compile parms	Type compile options that are not already in effect through: System defaults. Compile Procedure skeletons. User Options. See **Other Options** below.
Pgm binder parms	Type binder options that are not already in effect through: System defaults for the compiler. Compile Procedure skeletons. User Options. See **Other Options** below.
Db2 precompile	Select to include a Db2 precompile step in the stage job. Omit to not include a Db2 precompile step in the stage job.
Precompile variables	Select to display the **Db2 Physical Subsystems** panel to set additional options for Db2 components. Field **Db2 Precompile** must be **Yes**. Omit to not display the **Db2 Physical Subsystems** panel.
Display other options	Select to display the **Stage: User Options** panel before submitting the stage job. Omit to not display the **Stage: User Options** panel before submitting the stage job. Obtain User Options from component history or from a **designate**d pr**ocedure** with **Force Level 2**.

Field	Description
Suppress batch messages	Select this field so that for a recompile executed in batch mode, suppress component activation messages sent when recompile is successful.
	N Omit this field so that for a recompile executed in batch mode, do not suppress component activation messages sent when recompile is successful.
Job statement information	Type valid job card information.

Type your entries on the **Online Recompile Job Information** panel and press **Enter**. If you set the **Other Options** field to **Y**, the **Stage: User Options** panel is displayed. Type your entries on this panel and press **Enter**. A recompile job is submitted.

10 After recompile completes successfully, the new load module and compressed listing reside in the staging libraries of your package. You must check in the package into its starting release area to copy the recompile components from the package staging libraries into release area libraries.

Relinking Load Components

In a package attached to a release, a relink that you initiate through the **Relink Load Modules** panel is driven by either:

- A link-edit control member in a package staging library, baseline library, or release area library.

- Calls to subprograms from a load module in a package staging library, a baseline library, or a release area library.

When you relink from area libraries, you can let ERO search for the latest version of the component in area libraries and baseline. See "Searching Area Libraries for Latest" on page 228 for information on latest versions in ERO.

1 Follow these steps to access the package that you want to relink into.

  a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

  b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

  c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____        Scroll ===> CSR

   Release  Sta  Install  Work request      Dept      Aud  Creator  Pkgs
__ FIN6410  DEV  20160328  WR 9010           FINANCE        USER015  00001
__ FIN6430  DEV  20160328  WR 9030           FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have change packages attached to them.

   d On the **Release List** panel, type line command **PK** on a release row to select the release that contains the package you want to relink into. Press **Enter**, and the *release* **- Release Package List** panel is displayed.

```
CMNRMPLF              FIN6430 - Release Package List          Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

    Package    Sta  Area      Install DT/TM  Last Promotion     Aud Chkd In
__  ACTP000032 DEV  ACCTPAY   20160429 2359  SERT6    S6P1IT  00          N
__  ACTP000038 DEV  ACCTPAY   20160429 2359  SERT6    S6P1IT  00          N
****************************** Bottom of data ******************************
```

   The *release* **- Release Package List** panel shows all packages that are attached to the release that you selected.

   The fields on the *release* **- Release Package List** panel are described on .

2 On the *release* **- Release Package List** panel, type **RL** in the line command of the package that you want to relink into, and press **Enter**. The **Relink Load Modules** panel is displayed.

```
CMNRLNKR                     Rebind Load Modules
Command ===> _____

Package: . . . . . . . . . ACTP000038
Relink from  . . . . . . . S              (S(tage),B(aseline),R(elease))
Input library type . . . . LOS            (Blank for list)
Target library type  . . . ___            (Blank for list)
Member name  . . . . . . . _____+ (Blank/Pattern for list)

Enter "/" to select option
 _ Specify release area
 _ LCT member list
```

This table describes the information on the panel.

Field	Description
Package	Displays the package you want to relink a load module into.
Relink from	Type the location of the link-edit control member or the load module to be relinked. S Package staging library B Baseline library R Release area library
Input library type	The library type of the like-load module to be relinked from. The input library type may be like-object, like-NCAL or like-load.
Target library type	The library type of the like-load module to be relinked. The output library type must be like-load.
Member name	The name of the bind control member or the like-load member to be relbound Type a name pattern or blank to display a member selection list.

Field	Description
Specify release area	Use this field to determine whether relink will display a library selection list.
	Select to display a selection list of area libraries and baseline that might contain the component(s) you want to recompile.
	Omit to automatically search for latest.
LCT member list	Specify whether this rebind is driven by a bind control member or a load module.
	If selected, then the bind is driven by a bind control member.
	Omit to ensure bind is driven by a load module.

3 The next steps in the relink process depend on the location of the link control or load that is relinked into your package. The location of the link control or load depends on your settings for fields **Relink From** and **Specify Release Area** on the **Relink Load Modules panel** as indicated in this table.

NOTE This table and the examples that follow assume a relink driven by a link control (LCT) member.

Relink From	Specify Rel. Area	Location of Source for Relink / Next Steps
S or B	Omitted or selected	ERO relinks from a staging or baseline library depending on the **Relink From** field setting. The next steps depend on what you specified in the **Member Name** field:
		Blank or pattern — **List - *library*** panel (CMNRMLST). See Step 6 on page 276.
		Full name — Standard relink process. See Step 7 on page 277.
R	Omitted	ERO automatically finds the latest version of the component in area libraries and baseline. The next steps depend on what you specified in the **Component Name** field:
		Blank or pattern — **LIST - Consolidated Release Libraries** panel (CMNRMLST). See Step 4 on page 275.
		Full name — Standard relink process. See Step 7 on page 277.
R	Selected	ERO displays a selection list of area libraries and baseline that might contain the component you want to relink. You select the release area library or baseline. The next steps depend on what you specified in the **Component Name** field:
		Blank or pattern — **Release Library Selection List** panel (CMNRLRLS). See Step 5 on page 275.
		Full name — **Release Library Selection List** panel (CMNRLRLS). See Step 5 on page 275.

4 This is an example of the **List - Consolidated Release Libraries** panel (CMNRMLST). This panel lists the latest version of components matching the library type specified on the **Relink Load Modules panel** in prior releases and baseline.

```
CMNRMLST                    Library Member List           Row 1 to 3 of 3
Command ===> _____  Scroll ===> CSR

   Input Library:


   Name                + Function Created    Changed        Size     User
 _ ACPSRCD1                     2008/01/18 2009/09/14 16:17 00000001 USER239
 _ ACPSRC30                     2010/07/14 2010/11/28 10:20 00000006 USER239
 _ ACPSRC50                     2002/05/11 2010/11/28 09:45 00000008 USER239
****************************** Bottom of data ******************************
```

Select one or more components on the **Recompile From - Consolidated Release Libraries** panel for recompile into your release package.

NOTE The name of the release area library or baseline library containing the latest component version listed on the **Recompile From - Consolidated Release Libraries** panel is not displayed until you get to the **Online Recompile Job Information** panel (CMNRCMP1).

When you make your member selection on this panel and press **Enter**, the standard relink process is invoked. See .

5 This is an example of the **Release Library Selection List** panel (CMNRLRLS).

```
CMNRLRLS              Release Library Selection List    Row 1 to 10 of 10
Command ===> _____  Scroll ===> CSR

       Package: ACTP000038   Status: DEV   Install date: 20160411

  Library type: LOS

  Dataset                                      Release        Area
 _ CMNTP.S4.STAG.ACTP.#000038.DEV.LCT
 _ CMNTP.FIN6430.ACCTPAY.ACTP.LCT              FIN6430        ACCTPAY
 _ CMNTP.FIN6430.FINANCE.ACTP.LCT              FIN6430        FINANCE
 _ CMNTP.FIN6410.ACCTPAY.ACTP.LCT              FIN6410        ACCTPAY
 _ CMNTP.FIN6410.GENLEDGR.ACTP.LCT             FIN6410        GENLEDGR
 _ CMNTP.FIN6410.FINANCE.ACTP.LCT              FIN6410        FINANCE
 _ CMNTP.FIN6420.ACCTPAY.ACTP.LCT              FIN6420        ACCTPAY
 _ CMNTP.FIN6420.GENLEDGR.ACTP.LCT             FIN6420        GENLEDGR
 _ CMNTP.FIN6420.FINANCE.ACTP.LCT              FIN6420        FINANCE
 _ CMNTP.S4.V710.BASE.ACTP.LCT                 BASELINE
****************************** Bottom of data ******************************
```

This table describes the fields on the **Release Library Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an dataset.
	CANCEL Cancel panel without action. (Abbreviation: C)
	REFRESH Refresh the panel display from data stores. (Abbreviation: R)
Package	Displays the change package ID.

Field	Description
Status	Displays the package status.
Install date	Displays the package install From date.
Line Command	S (Select) is the only valid line command code.
Dataset	Displays area library names for the specified library type. **Note:** Area libraries from prior releases are listed.
Release	Displays the release ID for the area library, or displays BASELINE for the baseline library.
Area	Displays the release area name for the area library, or displays blank for the baseline library.

NOTE Libraries listed on the the **Release Library Selection List** panel match the library type you specified on the **Relink Load Modules** panel, but they may not contain the component you want or any components at all.

If you specified a full **Component Name** on the **Relink Load Modules panel**, and the specified component is in the library you selected on the **Release Library Selection List** panel, the next step is the standard relink process. See .

If you did not specify a full **Component Name** on the **Relink Load Modules panel**, the next panel that is displayed is the **Recompile From:** *library* panel (CMNRCMP2), which is described in the next step.

6   This is an example of the **List - *library*** panel (CMNRMLST).

```
CMNRMLST                      Library Member List              Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Input library:
   CMNTP.FIN6410.ACCTPAY.ACTP.LCT

   Name                     + Function Created    Changed         Size     User
_ ACPSRC30                            2013/07/14 2015/11/28 09:45 00000006 USER239
_ ACPSRC50                            2002/05/11 2015/11/28 09:45 00000008 USER239
****************************** Bottom of data ******************************
```

This table describes the commands and line commands you can use on the **List - library** panel.

Field	Description
COMMAND	Type one of the following commands, or leave the command line blank and type a line command next to a component name.
	REFRESH Display updated information on this panel. Abbreviation: R
	SORT *heading* Sort listed components by information under the specified column heading. Abbreviation: SO
	LOCATE *member* Locate a component by information in the last sorted column or by Name if the components were not sorted. Abbreviation: L
	CANCEL Cancel the function and return to the previous panel. Abbreviation: C
	LONG Display additional component information on a second line.
	SHORT Suppress the additional component information displayed with the Long command. Abbreviation: SH
Line Command	Type a line command to the left of the Name row:
	R Select the component for rebind processing.
	S Select the component for rebind processing.
	B Browse the component.
	H Display component history.
	V View the component. (Applies to bind control only.)

When you make your member selection on this panel and press **Enter**, the standard relink process is invoked, which continues in the next step.

7 If you choose a component for relink that is in another active change package, the **History - *component*** warning panel is displayed.

```
CMNCMPSW                     History - ACPSRC50.LOD            Row 1 to 4 of 4
Command ===> _____          Scroll ===> CSR

This component is included in the following packages:

Package    Sta Promoted vv.mm Last action      Size  Procname User     Release
ACTP000043 DEV S4P1AT         2015/09/01 09:58        CMNCOB2  USER239
ACTP000040 DEV S4P1AT         2015/08/17 19:12        CMNCOB2  USER240
ACTP000037 DEV                2016/03/28 09:48        CMNCOB2  USER239  FIN6420
ACTP000036 DEV                2016/03/28 09:46        CMNCOB2  USER239  FIN6410
****************************** Bottom of data ******************************
```

This panel lists the other packages that contain the component that you want to relink. Make sure that you are coordinating your work with the other developers who have checked out or staged the component into their packages.

If you want to abandon the relink for this component, type **CANCEL** in the **Command** line and press **Enter**. Otherwise, press **Enter** to relink the component.

8   The **Rebind Job Information** panel is displayed.

```
CMNRLNK1                        Rebind Job Information
Command ===> _____


      Package: ACTP000038     Status: DEV      Install date: 20160418

Member name:        ACPSRC50                                      +
Dataset name:       CMNTP.FIN6410.ACCTPAY.ACTP.LCT                +
LCT member list:    YES  Input library type: LOS   Target library type: LOD


Language . . . . . . . . . COBOL2    (Blank for list)
Compile procedure  . . . CMNCOB2    (Blank for list)
Pgm binder parms . . . . _____

Enter "/" to select option
  _ Db2 processing          _ Other Db2 options
  _ Other options           _ User variables
  _ Suppress batch messages

Job statement information:
  //USER2390 JOB (X170,374),'REBIND',_____
  //          CLASS=A,MSGCLASS=Y_____
  //*_____
  //*_____
```

This table describes the fields on the Rebind Job Information panel.

Field	Description
Member name	Displays the name of the component to be relinked.
Dataset name	Displays the name of the library you are relinking from.
LCT member list	YES or NO - display a member to select from
Input Library type	Displays the component library type and library type description.
If there is a **designated procedure** for the component being relinked, and the **Force Level** in that procedure is **2**, then the fields on the **Recompile Job Information** panel are presented in display mode. If the **Force Level** of the d**esignated procedure** is 1, you can restore the fields on this panel to the values required for freeze by typing ? in the Compile Procedure field.	
Language	Type the source language. If you leave the **Language** field blank, the **Language Selection List** is displayed when you press **Enter**. If the **Language** field contains information when the panel is first displayed, the short ISPF message in the upper right corner of the panel tells you where the language was obtained: HISTORY ASSUMED — Obtained from component history. DESIGNATED ENFORCED — Obtained from a designated procedure. PRIOR ASSUMED — Obtained from a prior use of this panel for another component during your current ChangeMan ZMF session.

Field	Description
Compile procedure	Type the compile procedure to be used to relink the component. Compile procedures are members in the ChangeMan ZMF skeleton library that are processed by ISPF file tailoring to create stage JCL.
	If you leave the **Compile Procedure** blank, but there is only one compile procedure defined for the specified language, the **Compile Procedure** field is filled automatically when you press **Enter**.
	If you leave the **Compile Procedure** field blank, and if there are multiple compile procedures defined in administration for the specified language, the **Compile Procedure Selection List** panel is displayed when you press **Enter**.
	Type ? to restore **Language**, **Compile Procedure**, **Compile Parms**, **Pgm binder parms**, **Db2 Precompile**, and **User Options** from a d**esignated procedure** with **Force Level 1**.
COMPILE PARMS	Type compile options that are not already in effect through: System defaults. Compile Procedure skeletons. User Options. See **Other Options** below.
Pgm binder parms	Type binder options that are not already in effect through: System defaults for the compiler. Compile Procedure skeletons. User Options. See **Other Options** below.
Db2 processing	Indicates whether or not a Db2 pre-process or co-process is to be invoked during the compile.
Other Db2 options	Change or refer to values affecting the Db2 processing.
Other options	Select this field to display and change user options.
User variables	Enter / to specify user variables used to pass information to skeleton file tailoring.
Suppress batch messages	Select this field to suppress the component activation messages that are normally issued by the batch job when rebind is successful. If omitted then for rebind executed in batch mode, do not suppress component activation messages sent when rebind is successful.
Job statement information	Type valid job card information.

Type your entries on the **Rebind Job Information** panel and press **Enter**. If you set the **Other Options** field to **Y**, the **Stage: User Options** panel is displayed. Type your entries on this panel and press **Enter**. A recompile job is submitted.

Backing Out a Release Package

Installed and baselined release packages are automatically backed out at production and development sites when you back out the release they are attached to.

See .

Reverting a Release Package

When you revert a release, the status of release packages is not changed. If packages attached to a reverted release are in APR status, you can block the release and start the release approval process again without reverting release packages.

If your release was distributed to ChangeMan ZMF production instances, you can revert the release packages at the development site, and the packages will be automatically reverted at each chosen production site.

Follow these steps to revert packages that are attached to a release that you have already reverted.

> **NOTE** This procedure describes reverting a release package that is installed at production sites. If you are working in an ALL environment, you will not see the panels for site selection, but the release package backout process is essentially the same.

1   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter**.

2   On the **Release List Specification Parameters**, type appropriate selection criteria and press **Enter**.

3   On the **Release List** panel, type **PK** in the line command of the release you want and press **Enter**.

4   The *release* **- Release Package List** panel is displayed. The status of the packages attached to the release is **APR**, **DIS**, or **BAK**.

```
CMNRMPLF               FIN6430 - Release Package List          Row 1 to 1 of 1
Command ===>                                             Scroll ===> CSR

    Package    Sta  Area      Install DT/TM  Last Promotion     Aud Chkd In
___ ACTP000032 APR  ACCTPAY   20160429 2359  SERT6    S6P1IT   00       N
___ ACTP000038 DIS  ACCTPAY   20160429 2359  SERT6    S6P1IT   00       N
****************************** Bottom of data ******************************
```

5   Type **RV** in the line command for the package(s) that you want to revert, then press **Enter**. The **Revert: Site Information** panel is displayed.

```
CMNRVSTI                    REVERT: Site Information          Row 1 to 3 of 3
Command ===>                                             Scroll ===> CSR

        Package: ACTP000038   Creator: USER239    Status: BAK

          Install date/time                                      Site
   site   yyyymmdd from   to Primary/backup contacts  Phone numbers  status
 _ SERT#  20160418 0800 2359 KIKA HALEMANU            808-555-1213   BAK
                             IAN THOMPSON             808-555-1215
 _ SERT4  20160418 0800 2359 SALEH AL-FULAN           808-555-1217   BAK
                             HANS SCHARFF             808-555-1216
 _ SERT5  20160418 0800 2359 HUNG NGUYEN              808-555-1214   BAK
                             WENWEI HAN               808-555-1212
****************************** Bottom of data ******************************
```

Notice the **Site Status** column at the right of the panel, which is the status of the release at the production instance.

6 On the **Revert: Site Selection** panel, select the site or sites where you want your package reverted, and Press **Enter**. The *site - Revert Reasons* panel is displayed.

```
CMNREVRS                    SERT# - Revert Reasons
COMMAND ===>

        Package: ACTP000038      Status: BAK      Install date: 20160418


        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
        _____
```

7 Type your reasons for reverting the *site - Revert Reasons* panel and press enter. If the site you selected is a P instance, the **Submit Remote Revert Request** panel is displayed.

```
CMNRMBJC                  Submit Remote Revert Request
Command ===> _____

   Site ID: SERT#      Release: FIN6430      Creator: USER239      Status: BAK

Job Statement Information:
   //USER239A JOB (ACCOUNT),'SERT5 JOB',      <=== CHANGE ACCORDINGLY
   //              CLASS=A,                    <=== CHANGE ACCORDINGLY
   //              NOTIFY=USER239,             <=== CHANGE ACCORDINGLY
   //              MSGCLASS=Y                  <=== CHANGE ACCORDINGLY
```

Modify the job card as required and press **Enter** to submit a service request job that connects to the production site through TCP/IP and initiates package revert at that site.

If you selected more than one site to revert, the *site - Revert Reasons* panel is displayed for the next selected site. This panel displays the revert reasons that you typed for the previous site.

Repeat the *site - Revert Reasons* step and the **Submit Remote Revert Request** step until service request jobs have been submitted for all of sites that you selected.

8   When you have submitted service request jobs for all of the sites that you selected,
the **Revert: Site Selection** panel is displayed again.

```
CMNRVSTI                      REVERT: Site Information           Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

          Package: GENL000005   Creator: USER240    Status: BAK

            Install date/time                                        Site
    Site    yyyymmdd from   to Primary/backup contacts  Phone numbers  status
_ SERT#    20160418 0800 2359 KIKA HALEMANU             808-555-1213   BAK
                              IAN THOMPSON              808-555-1215
_ SERT4    20160418 0800 2359 SALEH AL-FULAN            808-555-1217   DEV
                              HANS SCHARFF              808-555-1216
_ SERT5    20160418 0800 2359 HUNG NGUYEN               808-555-1214   BAK
                              WENWEI HAN                808-555-1212
****************************** Bottom of data ******************************
```

If you wait until all package revert jobs for a site have run, then **Refresh** the **Revert:
Site Selection** panel, you can see the status of the package at a site change to DEV.

9   Press **PF3** and you are returned to the *release* **- Release Package List** panel. If all
revert package jobs have run, the status of the package is changed to DEV.

```
CMNRMPLF               FIN6430A - Release Package List        Row 1 to 4 of 4
Command ===> _____ Scroll ===> CSR

       Package        Release              Package
       Name    Status Area    Attach Date  Creator    Date   Aud  Checked In
__  ACTP000038  DEV   ACCTPAY   20101201   USER240  20100722  00      Y
__  ACTP000039  BAK   ACCTPAY   20101201   USER240  20100722  00      Y
__  COMM000008  BAK   ACCTPAY   20101201   USER240  20100812  00      Y
__  GENL000005  BAK   GENLEDGR  20101201   USER240  20100812  00      Y
****************************** Bottom of data ******************************
```

10   Press PF3 and you are returned to the **Release List** panel.

```
CMNRMRLF                         Release List                 Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request   Dept     Aud  Creator  Pkgs
__ FIN6410  BAS  20160328 WR 9010        FINANCE       USER015  00001
__ FIN6430  BAK  20160328 WR 9030        FINANCE       USER015  00003
****************************** Bottom of data ******************************
```

Release package revert is complete.

When a release and its attached packages are backed out, you must revert the release
and all of the attached packages to DEV status to make changes and start the release
install process again.

Chapter 9

Promoting Release Area Components

Area promotion populates test environment libraries with components from ERO area libraries. Area demotion removes area components from test libraries.

> **NOTE** You can promote and demote release packages (packages attached to ERO releases) to and from promotion sites defined in base ChangeMan ZMF. You are not limited to promotion site and levels defined to ERO.
>
> **NOTE** The Base Promote (BP) and Base Demote (BD) commands are listed *release - Release Package List* panel that is described on page 224.
>
> All promotion sites and levels not already defined to the releases your packages are attached to are eligible targets for base promotion and base demotion.

Area Promotions

ERO area promotion is built on low level ChangeMan ZMF services, originally developed for package promotion, to make it possible for you to:

- Use the promotion sites, levels, and libraries that you have configured in application administration in the base product.

- Execute special functions like Db2 binds and CICS PHASEIN that you have enabled in promotion skeletons.

The use of low level package promotion services makes area promotion similar to base ChangeMan ZMF package promotion in some ways and different in other ways. Some characteristics of area promotion that are important to keep in mind include:

- With area promotion, staging libraries are not referenced when promoting to sites and levels defined to ERO. Area promotion jobs copy components from area libraries into target test libraries.

- You can demote components that are no longer in an area if they were retrieved after they were promoted.

- You select area components for promotion by application. If an area contains components from more than one joined application, you must perform more than one promote or demote action to promote or demote all components checked in to the area.

- If you select area components for promotion that were checked in from two different packages, area promotion submits a separate job or series of jobs for each package.

- There is no area promotion history. Area promotion activities are displayed in package promotion history available through the query package function.

- The behavior of area promotion is controlled by a indicators set in ERO administration. Area promotion ignores package promotion rules set in the base product, and Exit 27 is not invoked.

- You can fully demote a package whose components have been promoted with area promotion. This function is made available to simplify the process of detaching a package from a release, which required demoting and retrieving all package components.

Area Promotion Behavior

Area promotion ignores the promotion rules in application administration in the base ChangeMan ZMF product, and Exit 27 is not invoked. Area promotion behavior is determined by promotion site/level definitions inherited from application administration and by four behavior rules you set for each application / area / site / level combination that you define in ERO administration.

Inherited Definitions and Rules

These definitions and rules are inherited from application administration when you use a site/level definition from the base ChangeMan ZMF product to build an application / area / site / level definition in ERO area promotion. You cannot modify these in ERO administration:

- Site Name

- Force Demotion Rule - Determines if an area can be promoted to a site if it is already promoted to another site.

- Internal Reader Class - Used for submitting local and remote promotion jobs.

- Level Nickname

- Level Number

- Promotion Level Security Entity - Determines who can promote to a promotion site/ level and demote from that site/level.

- Procedure - The high level skeleton used by file tailoring to build promotion job JCL.

ERO Area Promotion Behavior Rules

You set these four rules in ERO administration when you define a application / area / site / level combination in ERO administration. You cannot change these rules for an application / area / site / level combination if any area components are promoted to that level.

- Area Check-in Approved - Determines whether an area must have all check-in approvals before area components can be promoted.

- Area Blocked - Determines whether an area must be blocked before area components can be promoted, and whether all area components must be demoted before the area can be unblocked.

- Area Check-off Approved - Determines whether an area must have all check-off approvals before area components can be promoted.

- Demotion Required For Retrieve - Determines whether you must demote a component before you can retrieve the component.

Promotion Jobs and Messages

If an area contains components from more than one application, you must perform an explicit promote or demote action for each application. Each explicit promote or demote action you take may submit multiple jobs, or multiple series of jobs in the case of remote sites.

- Area promotion submits a job or series of jobs for each package whose components were checked in to the area being promoted or demoted.

- The area promote or demote job(s) for a single package may be split into multiple jobs or series of jobs if the number of components being promoted or demoted exceeds the capacity of the promotion service.

When multiple area promotion jobs are submitted for components from the same package, MVSSEND success messages are suppressed until the last job completes successfully. Failure messages are sent from any area promotion job that fails, and the failure message includes the release area and package ID to help you promote or demote again the components in the job that failed.

Configuring Area Promotion Sites and Levels

This sections tells you how to add and update promotion site and level definitions for release areas in ERO administration.

The instructions in this section assume that:

- Promotion sites, levels, and libraries are already defined in application administration in the base ChangeMan ZMF product for the applications joined to a release.

- You have customized promotion skeletons to execute special processes required for your test environments.

- The application administrator has mapped ERO areas to promotion sites and levels.

Initially Defining Promotion Levels for an Area

If you have not previously defined any promotion levels for a release area, use the procedure described in this section to define levels for an area. If you want to update existing promotion levels for an area or add levels, see "Adding or Updating Promotion Levels for an Area" on page 292.

To initially define promotion levels for a release area, you use a series of panels arranged in the following hierarchy:

Promotion Definition Panel Hierarchy	Panel Title	Panel ID
Release	**Release List**	CMNRMRAL
Application	*release* **- Joined Application List**	CMNRMRAP
Area	***release* Release Area Selection List**	CMNRMPMA
Site	*release/area* **Site Selection List**	CMNRMPMS
Level	*release/area/site* **- Level List**	CMNRMPML
Behavior Rules	*release/area/site/level* **Behavior**	CMNRMPMF

TIP On many of the panels in the process described here, you can select multiple rows to define promotion levels serially. However, until you become familiar with the panels in this process, it is possible to lose track of where you are while processing multiple selections. You may prefer to make a single selection in each panel to define one level, then go to "Adding or Updating Promotion Levels for an Area" on page 292 to finish the definition of promotion levels for your release.

Follow these steps to initially define a promotion level for a release area in ERO Administration:

1 Access the **Release List** through the following menu path.

   a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

   c Type **A** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

   d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**. and the **Release List** panel is displayed.

```
CMNRMRAL                      Release List                    Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work Request       Dept     Aud  Creator  Pkgs
__ FIN6410  DEV  20160430  WR 9010           FINANCE       USER239  00005
__ FIN6420  DEV  20160427  WR 9011           FINANCE       USER239  00005
__ FIN6430  DEV  20160418  WR 9012           FINANCE       USER239  00006
***************************** Bottom of data *****************************
```

The **Release List** panel shows the releases that have areas defined and satisfy the selection criteria you typed on the **Release List Parameters** panel. If you entered no selection criteria, this panel shows all releases with areas defined.

2   On the **Release List** panel, type line command **RA** on a release row and press **Enter**. The *release* **Joined Application List** panel is displayed.

```
CMNRMRAP                 FIN6430 Joined Application List           Row 1 to 3 of 3
Command ===> _____       Scroll ===> CSR

   Appl  Lib Sys Prm   Join Date  Application Description
__ ACTP   Y   Y   N    20160225   Accounts Payable
__ COMM   Y   Y   N    20160225   Common Components
__ GENL   Y   Y   N    20160225   General Ledger Accounting
****************************** Bottom of data ******************************
```

This panel shows all applications joined to the release.

3   On the *release* **Joined Application List** panel, type **AP** on one or more application rows and press **Enter**. The *release* **Release Area Selection List** panel is displayed.

```
CMNRMPMA               FIN6430 Release Area Selection List         Row 1 to 3 of 3
Command ===> _____       Scroll ===> CSR

   Area
   Name     Type     Step  Description
_  ACCTPAY  SUBSYS   0001  Starting area for Accounts Payable components
_  GENLEDGR SUBSYS   0002  Starting area for General Ledger components
_  FINANCE  SYSTEM   0003  Final area for Finance components
****************************** Bottom of data ******************************
```

This panel displays all of the areas defined for the release.

This table describes the fields, commands, and line commands on the *release* **Release Area Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an area.
	CANCEL Cancel panel without update. (Abbreviation: CA)
	LOCATE *area* Locate an area. (Abbreviation: LO)
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type S to select one or more release areas.
Area Name	Displays the area name.
Type	Displays the area type.
	SUBSYS Subsystem area
	SYSTEM System area
Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Description	Displays the area description.

4 On the *release* **Release Area Selection List** panel, type **S** on one or more area rows to add or update promotion sites and levels and press **Enter**. The *release area* **Site Selection List** panel is displayed.

```
CMNRMPMS              FIN6430 ACCTPAY Site Selection List      Row 1 to 2 of 2
Command ===> _____         Scroll ===> CSR

   Site      Force        Internal Reader Class
   Name      Demotion       Site      Local
_  SERT4       N            A          A
_  SERP4       N            A          A
****************************** Bottom of data ******************************
```

This panel displays the promotion sites defined in Application Administration in the base ChangeMan ZMF product.

This table describes the fields, commands, and line commands on the *release area* **Site Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a site.
	CANCEL Cancel panel without update. (Abbreviation: CA)
	LOCATE Locate a site. (Abbreviation: LO) *site*
	REFRESH Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type S to select one or more promotion sites.
Site Name	Displays a list of promotion sites defined to the application in Application Administration in the base ChangeMan ZMF product.
Force Demotion	Displays the Force Demotion rule for a site from Application Administration in the base product. In ERO, the values for this rule mean: Y An area cannot be promoted to this site and another site at the same time. You must demote an area from all other sites before you can promote the area to this site. You cannot promote an area to another site until you demote the area from this site. N An area can be promoted to this site and an another site at the same time, unless the Force Demotion rule for the other site is Y. You can promote an area to this site while the area is promoted to another site unless the Forced Promotion rule for the other site is Y. You can promote an area to another site while it is promoted to this site, unless the Force Demote rule for the other site is Y.
Internal Reader Classes	Displays the JES internal reader class from Application Administration in the base product that is used when submitting promotion jobs for a site. Site Internal reader class for remote site. Local Internal reader class for local site.

5   On the *release area* **Site Selection List** panel, type **S** to select one or more promotion sites and press **Enter**. The *release area site* **Level List** panel is displayed.

```
CMNRMPML              FIN6430 ACCTPAY SERT4 Level List         Row 1 to 5 of 5
Command ===> _____    SCROLL ===> CSR

   Nickname   Entity   Level  Procedure
_  SERT4UT    ACTPDEV    10   CMN$$PRM
_  SERT4QA    QATCOORD   20   CMN$$PRM
_  SERT4UA    UATCOORD   30   CMN$$PRM
_  SERT4UTE   CMN4RLSM   50   CMN$$PRM
_  SERT4QAE   CMN4RLSM   60   CMN$$PRM
****************************** Bottom of data *******************************
```

This panel displays the promotion levels defined to the site in Application Administration in the base ChangeMan ZMF product.

This table describes the fields, commands, and line commands on the *release/area/ site* **- Level List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on promotion level.
	CANCEL — Cancel panel without update. (Abbreviation: CA)
	LOCATE *nickname* — Locate a promotion level nickname. (Abbreviation: LO)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type S to define one or more promotion levels for the area.
Nickname	Displays a list of Nicknames used on promotion panels that represents the promotion level and the set of promotion libraries.
Entity	Displays the security entity defined in your security system that is authorized to promote to and demote from this level.
Level	Displays the promotion level number assigned to this level. This level number is unique for the application and site.
Procedure	Displays the skeleton that is file tailored to create the batch jobs for promotion and demotion for this promotion level.

6   On the *release area site* **Level List** panel, type **S** to select one or more promotion levels and press **Enter**. The **Promotion Behaviour** panel is displayed.

```
CMNRMPMF                  Promotion Behaviour
Command ===> _____

  Release: FIN6430  Area:ACCTPAY   Site:SERT4    Level:SERT4UTE 50


Enter "/" to select option
  _ Area Check-in Approved
  _ Area Blocked
  _ Area Check-off Approved
  _ Demotion Required For Retrieve
```

This panel displays the behavior rules for an area promotion level in ERO. This information is unique to ERO and is not included in Application Administration in the base ChangeMan ZMF product.

This table describes the fields on the **Promotion Behavior** panel.

Field	Description
Area Check-in Approved	Select to set the Area Check-in Approved rule for the promotion level. The default for this rule is not selected.
	Select results in area check-in approval being required before you can promote area components to this level.
	Omited means that area check-in approval is not required before you can promote area components to this level.
Area Blocked	Select to set the Area Blocked rule for the promotion level. The default for this rule is not selected.
	Select means the Area must be blocked before you can promote area components to this level. You must demote all area components from this level before you can unblock the area.
	If not selected, then the Area need not be blocked when you promote area components to this level. You can unblock the area while area components are promoted to this level.
Area Check-off Approved	Select to set the Area Check-off Approved rule for the promotion level. The default for this rule is not selected.
	Select to require Area check-off approval before you can promote area components to this level. **Note:** The Area Blocked rule is forced to selected if the Area Check-off Approved rule is selected because an area must be blocked before check-off approvals can be entered.
	If not selected then Area check-off approval is not required before you can promote area components to this level.
Demotion Required For Retrieve	Select to set the Demotion Required for Retrieving rule. The default for this rule is not selected.
	If selected then you must demote area components from this level before you can retrieve the components from the area.
	If not selected then you can retrieve area components while the components are promoted to this level.

7 Overtype behavior rules you want to change on the **Promotion Behavior** panel, then press **Enter**. The promotion site/level is defined for the area, and the *release application* **Promotion** panel is updated and displayed.

```
CMNRMPM0                   FIN6430 ACTP PROMOTION            Promotion Updated
Command ===>                                                 SCROLL ===> CSR

   Area        Site        Nickname    Level  CI-Apr Blocked CO-Apr Retrieve
__ ACCTPAY     SERT4       SERT4UTE    50       N       N      N       N
***************************** Bottom of data ******************************
```

This panel lists the promotion site/levels defined for the listed areas in the release and application displayed in the panel header.

If the *release application* **Promotion** panel does not display a row for every area/site/level you intend to use for promotion in the release and application named in the

panel header, see "Adding or Updating Promotion Levels for an Area" on page 292 for instructions about using this panel to add new promotion levels or update existing promotion definitions.

Adding or Updating Promotion Levels for an Area

If you have previously defined at least one promotion level for a release area, use the procedure described in this section to update that definition or add promotion levels to the area. If you have not previously defined any promotion levels for a release area, see "Initially Defining Promotion Levels for an Area" on page 286.

To update existing promotion level definitions for a release area or to add new levels, you use a series of panels arranged in the following hierarchy:.

Promotion Definition Panel Hierarchy	Panel Title	Panel ID
Release	**Release List**	CMNRMRAL
Application	*release* **- Joined Application List**	CMNRMRAP
Defined Promotion Levels by Area	***release/application* - Promotion**	CMNRMPM0
Area	***release* Release Area Selection List**	CMNRMPMA
Site	*release/area* **Site Selection List**	CMNRMPMS
Level	*release/area/site* **- Level List**	CMNRMPML
Behavior Rules	*release/area/site/level* **Behavior**	CMNRMPMF

TIP On many of the panels in the process described here, you can select multiple rows to define promotion levels serially. However, until you become familiar with the panels in this process, it is possible to lose track of where you are while processing multiple selections. You may prefer to make a single selection in each panel to define one level at a time.

Follow these steps to update existing promotion level definitions for a release area or to add new levels to a release area in ERO Administration:

1 Access the **Release List** through the following menu path.

a Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

b Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

c Type **A** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

d Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**. and the **Release List** panel is displayed.

```
CMNRMRAL                     Release List                    Row 1 to 3 of 3
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install   Work Request      Dept    Aud  Creator  Pkgs
__ FIN6410  DEV  20160430  WR 9010           FINANCE      USER239  00005
__ FIN6420  DEV  20160427  WR 9011           FINANCE      USER239  00005
__ FIN6430  DEV  20160418  WR 9012           FINANCE      USER239  00006
****************************** Bottom of data ******************************
```

The **Release List** panel shows the releases that have areas defined and satisfy the selection criteria you typed on the **Release List Parameters** panel. If you entered no selection criteria, this panel shows all releases with areas defined.

2 On the **Release List** panel, type line command **RA** on a release row and press **Enter**. The *release* **Joined Application List** panel is displayed.

```
CMNRMRAP              FIN6430 Joined Application List      Row 1 to 3 of 3
Command ===> _____  Scroll ===> CSR

   Appl  Lib Sys Prm   Join Date  Application Description
__ ACTP   Y   Y   Y    20160325   Accounts Payable_____
__ COMM   Y   Y   N    20160325   Common Components_____
__ GENL   Y   Y   N    20160325   General Ledger Accounting_____
****************************** Bottom of data ******************************
```

This panel shows all applications joined to the release.

3 On the *release* **Joined Application List** panel, type **AP** on one or more application rows and press **Enter**. The *release application* **Promotion** panel is displayed.

4 The *release application* **Promotion** panel lists the promotion site/levels already defined for the listed areas in the release and application displayed in the panel header. From this panel you can update an existing site/level for a release area, or you can add a new site/level to the area.

```
CMNRMPM0                   FIN6430 ACTP Promotion           Row 1 to 1 of 1
Command ===> _____  Scroll ===> CSR

   Area      Site      Nickname   Level  CI-Apr Blocked CO-Apr Retrieve
__ ACCTPAY   SERT4     SERT4UTE   50      N       N       N      N
****************************** Bottom of data ******************************
```

- To add a new area/site/level combination, go to .

- To update an existing site/level, go to the next step.

5 To update an existing area/site/level on the ***release application* Promotion** panel, type **UP** on one or more panel rows and press **Enter**. The **Promotion Behavior** panel is displayed.

```
CMNRMPMF                  Promotion Behaviour
Command ===> _____

  Release: FIN6430  Area:ACCTPAY  Site:SERT4   Level:SERT4UTE 50


Enter "/" to select option
  _ Area Check-in Approved
  _ Area Blocked
  _ Area Check-off Approved
  _ Demotion Required For Retrieve
```

This panel displays the behavior rules for an area promotion level in ERO. This table describes the fields on the **Promotion Behavior** panel.

Field	Description
Area Check-in Approved	Select to set the Area Check-in Approved rule for the promotion level. The default for this rule is not selected.
	Select to require area check-in approval before you can promote area components to this level.
	Omit to not require area check-in approval before you can promote area components to this level.
Area Blocked	Select to set the Area Blocked rule for the promotion level. The default for this rule is not selected.
	Select to require the area must be blocked before you can promote area components to this level. You must demote all area components from this level before you can unblock the area.
	If omitted, then the area need not be blocked when you promote area components to this level. You can unblock the area while area components are promoted to this level.
Area Check-off Approved	Select to set the Area Check-off Approved rule for the promotion level. The default for this rule is omitted.
	Select to require area check-off approval before you can promote area components to this level. **Note:** The Area Blocked rule is forced to a selected state if the Area Check-off Approved rule is selected because an area must be blocked to before check-off approvals can be entered.
	If omitted then area check-off approval is not required before you can promote area components to this level.
Demotion Required For Retrieve	Select to set the Demotion Required for Retrieving rule. The default for this rule is omitted.
	If selected, you must demote area components from this level before you can retrieve the components from the area.
	If not selected, you can retrieve area components while the components are promoted to this level.

6 Overtype behavior rules you want to change on the **Promotion Behavior** panel, then press **Enter**. The promotion site/level is defined for the area, and the *release application* **Promotion** panel is updated and displayed.

```
CMNRMPM0                     FIN6430 ACTP Promotion              Promotion Updated
Command ===> _____    Scroll ===> CSR

   Area       Site       Nickname   Level  CI-Apr Blocked CO-Apr Retrieve
__ ACCTPAY    SERT4      SERT4UTE   50      Y       N       N       N
****************************** Bottom of data ******************************
```

This panel lists the promotion site/levels defined for the listed areas in the release and application displayed in the panel header.

- To update an existing site/level, go back to .

- To add a new area/site/level combination, go to the next step.

7 To add a promotion area/site/level, type ***** on a row on the *release application* **Promotion** panel, and press **Enter**. The *release* **Release Area Selection List** panel is displayed.

```
CMNRMPMA                  FIN6430 Release Area Selection List     Row 1 to 3 of 3
Command ===> _____    Scroll ===> CSR

   Area       Type      Step   Description
_  ACCTPAY    SUBSYS    0001   Starting area for Accounts Payable components____
_  GENLEDGR   SUBSYS    0002   Starting area for General Ledger components_____
_  FINANCE    SYSTEM    0003   Final area for Finance components_____
****************************** Bottom of data ******************************
```

This panel displays all of the areas defined for the release.

This table describes the fields, commands, and line commands on the *release* **Release Area Selection List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on an area.
	CANCEL — Cancel panel without update. (Abbreviation: CA)
	LOCATE *area* — Locate an area. (Abbreviation: LO)
	REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type S to select one or more release areas.
Area	Displays the area name.
Type	Displays the area type.
	SUBSYS — Subsystem area
	SYSTEM — System area
Step	Displays the step number specified in the area definition. The number in this field determines the order that areas are displayed on ERO panels.
Description	Displays the area description.

8 On the *release* **Release Area Selection List** panel, type **S** on one or more area rows to add or update promotion sites and levels and press **Enter**. The ***release/area - Site Selection List*** panel is displayed.

```
CMNRMPMS              FIN6430 ACCTPAY Site Selection List      Row 1 to 2 of 2
Command ===> _____        Scroll ===> CSR

   Site      Force       Internal Reader Class
   Name      Demotion       Site      Local
_  SERT4       N            A          A
_  SERP4       N            A          A
****************************** Bottom of data ******************************
```

This panel displays the promotion sites defined in Application Administration in the base ChangeMan ZMF product.

This table describes the fields, commands, and line commands on the ***release area Site Selection List*** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a site. CANCEL Cancel panel without update. (Abbreviation: CA) LOCATE *site* Locate a site. (Abbreviation: LO) REFRESH Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type S to select one or more promotion sites.
Site Name	Displays a list of promotion sites defined to the application in Application Administration in the base ChangeMan ZMF product.
Force Demotion	Displays the Force Demotion rule for a site from Application Administration in the base product. In ERO, the values for this rule mean: Y An area cannot be promoted to this site and another site at the same time. You must demote an area from all other sites before you can promote the area to this site. You cannot promote an area to another site until you demote the area from this site. N An area can be promoted to this site and an another site at the same time, unless the Forced Promotion rule for the other site is Y. You can promote an area to this site while the area is promoted to another site unless the Forced Promotion rule for the other site is Y. You can promote an area to another site while it is promoted to this site, unless the Force Demote rule for the other site is Y.
Internal Reader Classes	Displays the JES internal reader class from Application Administration in the base product that is used when submitting promotion jobs for a site. Site Internal reader class for remote site. Local Internal reader class for local site.

9 On the *release area* **Site Selection List** panel, type **S** to select one or more promotion sites and press **Enter**. The *release area site* **Level List** panel is displayed.

```
CMNRMPML                FIN6430 ACCTPAY SERT4 Level List          Row 1 to 5 of 5
Command ===> _____ SCROLL ===> CSR

   Nickname   Entity   Level   Procedure
_  SERT4UT    ACTPDEV    10    CMN$$PRM
_  SERT4QA    QATCOORD   20    CMN$$PRM
_  SERT4UA    UATCOORD   30    CMN$$PRM
_  SERT4UTE   CMN4RLSM   50    CMN$$PRM
_  SERT4QAE   CMN4RLSM   60    CMN$$PRM
****************************** Bottom of data ******************************
```

This panel displays the promotion levels defined to the site in Application Administration in the base ChangeMan ZMF product.

This table describes the fields, commands, and line commands on the *release area site* **Level List** panel.

Field	Description
Command	Type a command, or leave Command blank to type a Line Command on a promotion level. CANCEL — Cancel panel without update. (Abbreviation: CA) LOCATE *nickname* — Locate a promotion level nickname. (Abbreviation: LO) REFRESH — Refresh the panel display from the VSAM files. (Abbreviation: RE)
Line Command	Type S to define one or more promotion levels for the area.
Nickname	Displays a list of Nicknames used on promotion panels that represents the promotion level and the set of promotion libraries.
Entity	Displays the security entity defined in your security system that is authorized to promote to and demote from this level.
Level	Displays the promotion level number assigned to this level. This level number is unique for the application and site.
Procedure	Displays the skeleton that is file tailored to create the batch jobs for promotion and demotion for this promotion level.

10 On the *release area site* **Level List** panel, type **S** to select one or more promotion levels and press **Enter**. The **Promotion Behaviour** panel is displayed.

```
CMNRMPMF                      Promotion Behaviour
Command ===> _____

  Release: FIN6430  Area: ACCTPAY   Site: SERT4   Level: SERT4UTE 60


Enter "/" to select option
  _ Area Check-in Approved
  _ Area Blocked
  _ Area Check-off Approved
  _ Demotion Required For Retrieve
```

This panel displays the behavior rules for an area promotion level in ERO. This table describes the fields on the **Promotion Behaviour** panel.

Field	Description
Area Check-in Approved	Select to set the Area Check-in Approved rule for the promotion level. The default for this rule is omitted.
	Select to require area check-in approval before you can promote area components to this level.
	Omit to not required area check-in approval before you can promote area components to this level.
Area Blocked	Select to set the Area Blocked rule for the promotion level. The default for this rule is omitted.
	Select to require the area be blocked before you can promote area components to this level. You must demote all area components from this level before you can unblock the area.
	If omitted then the area need not be blocked when you promote area components to this level. You can unblock the area while area components are promoted to this level.
Area Check-off Approved	Select to set the Area Check-off Approved rule for the promotion level. The default for this rule is omitted.
	Select to require area check-off approval before you can promote area components to this level. **Note:** The Area Blocked rule is forced to selected if the Area Check-off Approved rule is selected because an area must be blocked before check-off approvals can be entered.
	Omit to not require area check-off approval before you can promote area components to this level.
Demotion Required For Retrieve	Select to set the Demotion Required for Retrieving rule. The default for this rule is omitted.
	Select to require that you must demote area components from this level before you can retrieve the components from the area.
	Omit to allow you to retrieve area components while the components are promoted to this level.

11 Overtype behaviour rules you want to change on the **Promotion Behaviour** panel, then press **Enter**. The promotion site/level is defined for the area, and the *release application* **Promotion** panel is displayed.

```
CMNRMPM0                      FIN6430 ACTP Promotion            Promotion Updated
Command ===> _____ Scroll ===> CSR

   Area        Site        Nickname    Level  CI-Apr  Blocked  CO-Apr  Retrieve
__ ACCTPAY     SERT4       SERT4UTE    50       N        N        N        N
__ ACCTPAY     SERT4       SERT4QAE    60       Y        Y        N        Y
****************************** Bottom of data ******************************
```

This panel lists the promotion site/levels defined for the listed areas in the release and application named in the panel header.

If the *release application* **Promotion** panel does not display a row for every area/site/level you intend to use for promotion in the release and application named in the panel header, go to to add more areas, sites, and levels.

Using Release Area Promotion

ERO release area promotion contains four functions that you use to manage and execute area and base ChangeMan ZMF promotions:

- Display promotion history

- Check for potential overlay

- Display promotion libraries

- Promote release area components

Follow the steps in this section to navigate through area promotion panels to promote release area components. From the *application* **- Promotion Option** panel on page 303, you can choose the options to display promotion history, check for potential overlay, or display promotion libraries.

1 Follow these steps to access the release that contains the area that you want to promote.

   a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c The **Release List** panel is displayed.

```
CMNRMRLF                       Release List                    Row 1 to 2 of 2
Command ===> _____ Scroll ===> CSR

   Release  Sta  Install  Work request     Dept      Aud  Creator  Pkgs
__ FIN6410  BAS  20160328  WR 9010         FINANCE        USER015  00001
__ FIN6430  BAK  20160328  WR 9030         FINANCE        USER015  00003
***************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

- Satisfy the selection criteria you typed on the **Release List Parameters** panel.

- Have release areas defined in ERO release administration.

2 On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to promote, then press **Enter**. The *release* **Release Area List** panel is displayed.

```
CMNRMALF               FIN6430 Release Area List             Row 1 to 3 of 3
Command ===> _____ Scroll ===> CSR

      Area                    Status              Area  Prior     Next
   Name     Type    Aud  BLK  CIA  COA  CIR  COR  step  area      area
__ ACCTPAY  SUBSYS  00   N    N    N    Y    N    0001            FINANCE
__ GENLEDGR SUBSYS       N    N    N    N    N    0002            FINANCE
__ FINANCE  SYSTEM       N    N    N    N    N    0003  GENLEDGR
***************************** Bottom of data ******************************
```

The *release* **Release Area List** panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

3 On the *release* **Release Area List** panel, type line command **PA** on the panel row for the area you want to promote, then press **Enter**. The *release* **Joined Application List** panel is displayed.

```
CMNRMAFL                    FIN6430 Joined Application List        Row 1 to 3 of 3
Command ===> _____       Scroll ===> CSR

   Appl   Join Date    Application Description
_  ACTP   20160325     Accounts Payable_____
_  COMM   20160325     Common Components_____
_  GENL   20160325     General Ledger Accounting_____
****************************** Bottom of data ******************************
```

This panel shows all applications joined to the release that contains the area you want to promote.

4 On the *release* **Joined Application List** panel, type line command **S** on the panel row for one or more applications that you want to promote in the release area you selected previously. You can also type **SETALL** and **SETOFF** in the Command line to select or deselect all applications. Press **Enter** and the *release area application* **Promotion** panel is displayed.

```
CMNRMPLV              FIN6430 ACCTPAY ACTP PROMOTION           Row 1 to 2 of 2
Command ===> _____       Scroll ===> CSR

   Site        Nickname   Level  CI-Apr Blocked CO-Apr
_  SERT4       SERT4UTE   50       Y      N       N
_  SERT4       SERT4QAE   60       Y      Y       N
****************************** Bottom of data ******************************
```

This panel shows all promotion sites and levels defined for the release, area, and application named in the panel header.

5 On the *release area application* **Promotion** panel, type line command **S** on one or more panel rows for the site/levels to which you want to promote.

NOTE If you select two promotion levels in the same site, components that are promoted to the first selected level will be cleaned up by the promotion to the second promotion level.

Press **Enter**, and the **Promotion Criteria** panel is displayed.

```
CMNRMPSC                     Promotion Criteria
Command ===> _____

Release: S4712010 Area: GENLEDGR GENL Site: SERT4P1 Promotion: S4P1UT   10

Specify Selection Criteria:
 Component name . . . . . . . _____+
                                           (Full Name, Blank or Mask)
 Component type . . . . . . . ___+         (Full Type, Blank or Mask)
 Check-in date: from  . . . . _____+   (yyyymmdd)
               to  . . . . . _____+   (yyyymmdd)
 Check-in user  . . . . . . . _____+   (Full Name, Blank or Mask)

Enter "/" to select option
  _ Full Promotion/Demotion
  _ Specific Package(s)
  _ Only Eligible Components
  _ Mixed Case
```

This panel contains selection criteria you can use to preselect area components that are displayed on subsequent promotion panels.

NOTE When you leave the area promotion panels and return to the *release* **Release Area List** panel, the values on the *release/area/application/site/level* **Criteria** panel are reset to the default values you see in the panel image above.

This table describes the fields on the **Release List Specification Parameters** panel.

Field	Description
Component Name	Type one of the following to select area components by component name. The default for this field is blank.
	Blank — Do not select area components by component name. List area components that satisfy all other selection criteria.
	Component Name — Select area component that match a component name.
	Mask — Select area components with names that fit a mask.
Component Type	Type one of the following to select area components by component (library) type. The default for this field is blank.
	Blank — Do not select area components by component type. List area components that satisfy all other selection criteria.
	Component Type — Select area components that match a component type.
	Mask — Select area components with component types that fit a mask.
Check-in date: from	Type the low end of a range of area component check-in dates to select. This date is inclusive. The default is blank, which is the same as 00000000.
to	Type the high end of a range of area component check-in dates to select. This date is inclusive. The default is blank, which is the same as 99999999.

Field	Description
Check-in user	Type one of the following to select area components by the userid of the person who checked the component in to the area. The default for this field is blank.
	Blank — Do not select area components by check-in userid. List area components that satisfy all other selection criteria.
	Userid — Select area component that were checked in to the area by a specific userid.
	Mask — Select area components that were checked in to the area by userids that fit a mask.
Full Promotion/ Demotion	Specify full or selective promotion or demotion.
	Select to promote or demote all components. No component list will be displayed. The Check-in user and From/To Date filtering is ignored. If other filtering is supplied, only eligible components are promoted or demoted.
	Omit to Indicate selective promotion or demotion. All filtering is applied, and the component selection list is displayed
Specific Package(s)	Type a value to display or suppress a panel to select packages checked in to the area. The default is omitted.
	Select to display the *application* **Release** *release* **Package List** panel so you can select area components checked in from specific packages.
	Omit to suppress the display of the *application* **Release** *release* **Package List** panel. List area components that satisfy all other selection criteria.
Only Eligible Components	Type a value to list or suppress area components that are currently promoted to the target site/level. The default is Y.
	Select to list components that are not currently promoted from the area to the target site.
	Omit to list all components, including those that are already at the target site.
Mixed Case	Type a value to determine the processing of lower case input in the **Component Name** field.
	Select to process **Component Name** input exactly as you type it, upper and lower case.
	Omit to fold **Component Name** input to upper case regardless of the case that you type.

> **NOTE** If the Full Promotion/Demotion field and the Only Eligible Components field are both selected, package components are fully demoted but the package promotion level remains unchanged.
>
> If the Full Promotion/Demotion field is selected and the Only Eligible Components field is omitted, the package promotion level is reset to level 0 (staging).

> **NOTE** If you filter the list of area components with selection criteria on the **Promotion Criteria** panel, use the **SETALL** command on the **Promote *release area site* Components** panel (page 305), you can promote a large number of area components without selecting each component individually from a long list.

6 After you have typed selection criteria on the ***release/area/application/site/level*** **Criteria** panel, press **Enter**. The ***application*** **- Promotion Options** panel is displayed.

```
CMNRMPRM                   ACTP - Promotion Options
Option ===> _____
  Release: FIN6430     Area: ACCTPAY    Status: DEV   Install Date: 20160318


      H Display history                    O Check for overlay    +
      L Display libraries                                         +

  Promotion Site : SERT4      Promotion Level: SERT4UTE + 50

Enter "/" to select option
  _ Bypass Overlay Check

Job Statement Information:
   //USER239E JOB (X170,374),
   //            CLASS=A,MSGCLASS=H,
   //            TIME=1,NOTIFY=USER239
   //*
```

This is the panel that executes promotion or offers three other functions to assist you in managing your promotion environment.

This table describes the fields on the ***application*** **- Promotion Option** panel.

Field	Description
Option	Type a promotion option, or leave blank and press Enter to promotion area components. H Display promotion history for the application/area/site/level. O Display potential component overlays in the target promotion libraries. L List promotion libraries for the site and level displayed on this panel.
Release	Displays the release ID of the release that contains the area where you are promoting components.
Area	Displays the name of the area containing the components you are promoting.

Field	Description
Release	Displays the status of the release containing the area where you are promoting components.
	DEV Development status - Releases that are in the process of being built. Applications may still join a release that is in DEV status.
	BLK Block status - Releases that are blocked from any further development and awaiting approval for installation into production and baseline libraries.
	APR Approve status - Releases that are approved for install by everyone on the approver list and awaiting for distribution, if applicable.
	REJ Reject status - Releases that were rejected by one or more approvers on the approver list.
	DIS Distribution status - Approved releases whose components are distributed to all remote sites specified in attached change packages.
	INS Install status - Releases that are installed in all remote sites specified in attached change packages.
	BAS Baseline status - Releases with all components baseline rippled in baseline libraries.
	BAK Backout status - Releases that were in BAS status, then backed out with all components removed from production and baseline libraries.
	DEL Deleted status - Releases that have been Memo Deleted
Install Date	Displays the Install From date for the release
Promotion Site	Displays the site that you are promoting to.
Promotion Level	Displays the level within the site you are promoting to.
Bypass Overlay Check	Type your choice for bypassing the check for potential component overlays before promotion is executed.
	Omit to check area components against target promotion libraries for potential component overlays. If potential overlays are detected, display a panel listing the common components where you can explicitly choose to overlay the component in the promotion library, skip promotion for the problem component, or discontinue the promotion action.
	Select to bypass the check for potential component overlays in target promotion libraries. **Note:** If you choose to bypass overlay checking, components in promotion libraries that have the same name and type as components in the area you are promoting are replaced without warning. This may invalidate test results for another project.
Job Statement Information	Job card information for area promotion jobs that will run on the same MVS image as your ISPF session.

If you select one of the three options at the top of the *application* **- Promotion Option** panel, see these sections for descriptions of the panel that will display:.

- If you select Option H, see "Displaying Promotion History" on page 308

- If you select Option L, see "Displaying Promotion Libraries" on page 310.

If you want to continue with area promotion, type your choice for the **Bypass Overlay Check**, change the **Job Statement Information** if required, and press **ENTER**.

7 The **Promote Component List** panel is displayed.

```
CMNRMPDM                  Promote Component List        Row  000001 of  000018
Command ===> _____    Scroll ===> CSR

  Release:  FIN6430   Area:  ACCTPAY   Site:  SERT4

  Component              Package    Promotion                 Current
  Name    Type  Status   Name       Date      Time  User      Name     Level
_ ACPCTL10 CTL            ACTP000038                           STAGING  00
_ ACPCTL20 CTL            ACTP000039                           STAGING  00
_ ACPCTL30 CTL            ACTP000039                           STAGING  00
_ ACPJCL10 ACT            ACTP000038                           STAGING  00
_ ACPJCL10 JCL            ACTP000039                           STAGING  00
_ ACPJCL20 ACT            ACTP000039                           STAGING  00
_ ACPJCL20 JCL            ACTP000039                           STAGING  00
_ ACPPRC10 PRC            ACTP000038                           STAGING  00
_ ACPPRC20 PRC            ACTP000039                           STAGING  00
_ ACPSRC1A LOD            ACTP000038                           STAGING  00
_ ACPSRC1A LST            ACTP000038                           STAGING  00
_ ACPSRC1A SRC            ACTP000038                           STAGING  00
_ ACPSRS1B LOS            ACTP000038                           STAGING  00
_ ACPSRS1B LST            ACTP000038                           STAGING  00
_ ACPSRS1B SRS            ACTP000038                           STAGING  00
_ ACPSRS1C LOS            ACTP000038                           STAGING  00
```

This panel displays a list of area components that you can promote. This components listed on this panel are a subset of all area components that has been selected by the panels you passed through to get to this panel:

■ You selected an application on the *release* **- Joined Application List** panel. See page 300.

■ You selected a site/level on the *release/area/application* **- Promotion** panel. See page 300.

■ You may have set additional area component selection criteria on the *release/ area/application/site/level* **Criteria** panel. See page 300.

This table describes the fields on the **Promote *release/area/site* Components** panel.

Field	Description	
Command	Type a command, or leave Command blank to type a Line Command on a component.	
	CANCEL	Cancel panel without update. (Abbreviation: C)
	LOCATE *component*	Locate a component. (Abbreviation: L)
	SETALL	Sets all line commands to S to select all listed components.
	SETOFF	Sets all line commands to blank to deselect any selected components.
Line Command	Type S to select a component for promotion.	

Field	Description
Component Name	Displays the component name.
Type	Displays the component library type.
Status	Displays the current component status. Blank means the component is not currently promoted.
Package Name	Displays the package ID of the package from which the component was checked in to the release.
Promotion Date	Displays the date that the component was last promoted or demoted. (yyyymmdd)
Time	Displays the system time that the component was last promoted or demoted. (hh:mm)
User	Displays the userid of the person who last promoted or demoted the component.
Current Name / Level	Displays the nickname of and level number of the promotion level to which the component was last promoted. "Staging 00" means the component is not currently promoted.
Level	Displays the target check-in area.

Type Line command **S** on a panel row for an area component to select the component for promotion, or type **SETALL** to select all listed components for promotion.

> **NOTE** If you filter the list of area components with selection criteria on the *release area application site level* **Criteria** panel (page 303), then use the **SETALL** command on the **Promote Component List** panel, you can promote a large number of area components without selecting each component individually from a long list.

8 When you are satisfied with your selections on the **Promote Component List** panel, press **Enter**.

If there are no problems with promoting any of the area components you selected, and if there are more selected promotion levels to process for an application, you are returned to the *release area application site level* **Criteria** panel to process the next promotion level. If all selected promotion levels are processed and there are more selected applications to process, you are returned to the *release area application* **Promotion** panel to process the next application.

When you have processed all selected applications and promotion levels, you are returned to the *release* **Release Area List** panel, which is shown on page 308.

Promotion skeletons are file tailored in the background to build promotion jobs, and the promotion jobs are submitted. MVS SEND messages inform you of the outcome of the promotion jobs.

9 If you left the **Bypass Overlay Check** field set to **N** on the *application* **- Promotion Option** panel, and if potential overlays are detected, the **Common Components** *site/level* panel is displayed.

```
CMNRMPCO                     Common Components        Row  000001 of  000002
Command ===> _____ Scroll ===> CSR

 Site: SERT4    Promotion level: SERT4UTE 50


 Name    Type  Package     Release    Promotion   Date       User      Status
 ACPJCL10 JCL  ACTP000075             SERT4UTE 50 2005/11/04 WSER239    Common
 ACPJCL30 JCL  ACTP000075             SERT4UTE 50 2005/11/04 WSER239    Common
****************************** Bottom of Data ******************************
```

This panel tells you that the target promotion libraries or history for the target promotion site/level contain one or more components that match the name and type of components that you are trying to promote from a release area.

This table describes the fields on the **Common Components** *site/level* panel.

Field	Description
Command	Cancel Cancel panel without update. (Abbreviation: C)
Component Name	Displays the name of the component that already exists in the target promotion library or in history for this promotion target. This is the member that will potentially be overlaid if the current promotion action is continued.
Type	Displays the library type of the common component.
Package	Displays the Package ID of the package where the component in the promotion library originated.
Release	The release ID of the release where the component in the promotion library originated. If this field is blank, the component was promoted from a the package, not from a release area.
Promotion	Displays the nickname and level number of the target promotion level.
Date	Displays the date when the component in the target promotion library was promoted. (yyyymmdd)
User	Displays the userid of the person who promoted the component in the target promotion library.

Field	Description		
Status	Displays the type of potential overlay.		
	Common	The component is physically present in the target promotion library, and there is history of another package or area promoting the component to this promotion level in this site.	
	Nohist.	The component is physically present in the target promotion library, but there is no history of another package or area promoting the component to this promotion level in this site.	
	History	The component is not physically present in the target promotion library, but there is history of another package or area promoting the component to this promotion level in this site.	
	Restaged	The component is physically present in the target promotion library, and there is history of this package or area promoting the component to this promotion level in this site before the component was restaged.	

You have two choices for action on the **Common Components *site/level*** panel.

- You can type **Cancel** on the command line, or press **F3**, to return to the **Promote *release/area/site* Components** panel and abandon your attempted area promotion until you can resolve the potential overlay.

- You can press **Enter** and proceed with the promotion.

> ⚠️ **CAUTION!** If there is a component in the promotion library that you overlay with the component from your area promotion, you could invalidate someone else's test results.

10 If you choose to ignore the potential overlay warning, and you press **Enter** on the **Common Components *site/level*** panel to proceed with your area promotion, you are returned to the ***release* - Release Area List** panel. Promotion skeletons are file tailored in the background to build promotion jobs, and the promotion jobs are submitted. MVS SEND messages inform you of the outcome of the promotion jobs.

```
CMNRMALF                    FIN6430 RELEASE AREA LIST        Promotion Submitted
Command ===> _____ Scroll ===> CSR

        Area                    Status              Area   Prior     Next
     Name      Type   Aud  BLK  CIA  COA  CIR  COR  Step   Area      Area
__   ACCTPAY   SUBSYS  00   Y    Y    Y    N    N   0001             FINANCE
__   GENLEDGR  SUBSYS       Y    Y    Y    N    N   0002             FINANCE
__   FINANCE   SYSTEM       Y    Y    Y    N    N   0003   ACCTPAY
***************************** Bottom of data *****************************
```

Displaying Promotion History

You can view history entries for promotion to and demotion from a site/level. Follow these steps to choose the Display Promotion History option in area promotion.

1 Follow the instruction on to get to the ***application* - Promotion Option** panel.

2 On the *application - **Promotion Option*** panel, type **H** on the Option line and press **Enter**. The **Promotion History** panel is displayed.

```
CMNRMPPH                    Promotion History              Row  000001 of  000011
Command ===>                                               Scroll ===> CSR

Promotion Site: SERT4      Promotion level: SERT4UTE 50

Count   Package   Date       Time  TSOID    Status     History
0000012 ACTP000038 2016/02/27 04:57 USER239  Completed  Selective Promotion
0000006 ACTP000039 2016/02/27 04:57 USER239  Completed  Selective Promotion
0000004 ACTP000039 2016/02/27 04:54 USER239  Completed  Selective Demotion
0000002 ACTP000038 2016/02/27 04:54 USER239  Completed  Selective Demotion
0000004 ACTP000039 2016/02/27 04:45 USER239  Completed  Selective Promotion
0000002 ACTP000038 2016/02/27 04:45 USER239  Completed  Selective Promotion
0000012 ACTP000038 2016/02/27 04:42 USER239  Completed  Selective Demotion
0000006 ACTP000039 2016/02/27 04:42 USER239  Completed  Selective Demotion
0000004 ACTP000039 2016/02/27 04:40 USER239  Completed  Selective Promotion
0000012 ACTP000038 2016/02/27 04:39 USER239  Completed  First Promotion
0000002 ACTP000039 2016/02/27 04:38 USER239  Completed  First Promotion
***************************** Bottom of Data ******************************
```

This panel shows all promotion and demotion activity against the site/level.

Area promotion shares the promotion hierarchy defined in application administration with package promotion in the base product. Promotion history shows all activity against a site/level, which may include package promotions and area promotions.

Since each promotion job copies components that originated in a single package, promotion history for area promote and demote actions may show several entries for the one area promotion action you took. There will also be multiple promotion jobs, and multiple promotion history entries, when a release area being promoted contains many components that originated in the same package.

This table describes fields on the *site/level* **Promotion History** panel.

Field	Description
Count	Displays the number of area components promoted or demoted.
Package	Displays the ID of the package where area promotion components originated, or the ID of a package that was promoted.
Date	Displays the date when the when the promote or demote action was taken. (yyyymmdd)
Time	Displays the time when the promote or demote action was taken. (hh:mm)
TSOID	Displays the TSOID of the person who initiated the promote or demote action.
Status	Displays the current status of the batch promotion process.
	SUBMITTED — The batch process was submitted, but all jobs have not completed successfully. A job may be waiting for an initiator, a job may still be running, or a job may have failed.
	COMPLETED — The batch promote or demote process has completed successfully.

Field	Description	
History	Displays the type of action in the promote or demote request.	
	Selective Promotion	Area promote or selective promote of package components
	Selective Demotion	Area demote or selective demote of package components
	First Promotion	First selective promote of a package component while the package is at Level 0
	Full Promotion	Full package promote
	Full Demotion	Full package demote

Displaying Promotion Libraries

You can list the promotion libraries that are the target of your promotion action. Follow these steps to choose the Display Promotion Libraries option in area promotion.

1 Follow the instruction on through to get to the *application -* **Promotion Option** panel.

2 On the *application -* **Promotion Option** panel, type **L** on the Option line and press **Enter**. The *site/level* **Libraries** panel is displayed.

```
CMNRMPLB                    Promotion Libraries          Row  000001 Of  000024
Command ===> _____  Scroll ===> CSR

 Site: SERT4    Promotion: SERT4UTE  50 +

 Library
 Type     Target Libraries
 ACT      PROD3.SERT4.PROM.ACTP.SERT4UTE.ACT            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.ACT            Library 1
 CPY      PROD3.SERT4.PROM.ACTP.SERT4UTE.CPY            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.CPY            Library 1
 CPS      PROD3.SERT4.PROM.ACTP.SERT4UTE.CPS            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.CPS            Library 1
 CTL      PROD3.SERT4.PROM.ACTP.SERT4UTE.CTL            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.CTL            Library 1
 JCL      PROD3.SERT4.PROM.ACTP.SERT4UTE.JCL            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.JCL            Library 1
 LCT      PROD3.SERT4.PROM.ACTP.SERT4UTE.LCT            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.LCT            Library 1
 LOS      PROD3.SERT4.PROM.ACTP.SERT4UTE.LOS            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.LOS            Library 1
 LOD      PROD3.SERT4.PROM.ACTP.SERT4UTE.LOD            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.LOD            Library 1
 LST      PROD3.SERT4.PROM.ACTP.SERT4UTE.LST            Shadow
          PROD3.SERT4.PROM.ACTP.SERT4UTE.LST            Library 1
```

Chapter 10
Auditing Release Areas

ChangeMan ZMF maintains the integrity of the components and applications under ERO control through the release area audit, which is more sophisticated than the package audit delivered with the ChangeMan ZMF base product.

Area audit evaluates relationships between different versions of the same component, and it evaluates relationships between components and other components that they include such as copybooks and statically linked load modules.

Area audit examines the components in libraries for a particular release area, as well as libraries for areas in the chain of next areas in the same release, libraries in areas of prior releases that will be installed sooner, and baseline libraries.

Auditing an Area

The release area audit function detects out-of-sync conditions in a release area. Follow these steps to audit an area.

1   Follow these steps to access the release area that you want to audit.

   a   Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

   b   Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

   c   The **Release List** panel is displayed.

```
CMNRMRLF                       Release List                    Row 1 to 2 of 2
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept     Aud  Creator  Pkgs
__ FIN6410  BAS  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430  BAK  20160328  WR 9030          FINANCE        USER015  00003
****************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

   •   Satisfy the selection criteria you typed on the **Release List Parameters** panel.

   •   Have change packages attached to them.

   d   On the **Release List** panel, type line command **AR** on a release row to select the release that contains the area you want to audit. Press **Enter**, and the *release Release Area List* panel is displayed.

```
CMNRMALF                  FIN6430 RELEASE AREA LIST        Promotion Submitted
Command ===> _____  Scroll ===> CSR

      Area                    Status              Area   Prior    Next
    Name    Type    Aud  BLK  CIA  COA  CIR  COR  Step   Area     Area
__  ACCTPAY SUBSYS  00   Y    Y    Y    N    N    0001            FINANCE
__  GENLEDGR SUBSYS       Y    Y    Y    N    N    0002            FINANCE
__  FINANCE SYSTEM        Y    Y    Y    N    N    0003  ACCTPAY
****************************** Bottom of data ******************************
```

The *release Release Area List* panel shows all areas that are defined in the release that you selected.

The fields on *release* **Release Area List** panel are described on .

2 On the *release* **Release Area List** panel, type **AU** in the line command of the area that you want to audit, and press **Enter**. The **Release Area Audit Panel** is displayed.

```
CMNRMAUD                      Release Area Audit
Command ===>


Release . . . . . . . . . FIN6430
Area  . . . . . . . . . . ACCTPAY
Auto resolve scope  . . . _          (A/C/S)
Ignore higher areas . . . NO         (Y/N/C)

Enter "/" to select option
  _ Include related applications
  _ Auto resolve out of synch conditions

Job statement information:
   //USER015G JOB (SM-1IKF-SM),'AUDIT A',
   //         CLASS=A,MSGCLASS=X,NOTIFY=USER015
   //*
   //*
```

3 This table describes fields and options on the **Release Area Audit Panel**.

Field	Description
Release	Displays the release that contains the area to be audited.
Area	Displays the release area to be audited.
Auto resolve scope	This field is required only if **Auto Resolve** is set. Choose an option to instruct Auto Resolve for out-of-synch conditions.
	S (Subroutine) Audit submits build jobs that create like-NCAL load modules.
	C (Composite) Audit submits build jobs that create like-load modules, including statically linked composite load modules.
	A (All) Audit submits build jobs for all like-source and like-load.
Ignore higher areas	Type an option to specify whether higher areas in the same release are included when area audit is run for non-final areas. Available options may be restricted by release administration settings.
	N N Area audit includes higher areas in the same release. The area audit return code is updated.
	Y Area audit ignores higher areas in the same release. Areas in prior releases are processed normally. The area audit return code is not updated; audits run with this setting are for information only.
	C The behavior of area audit is determined by the structure of the current release. ■ If the current release has only one starting area, then area audit runs as if the **Ignore Higher Areas** field is set to Y. ■ If there are multiple starting areas, area audit as if the **Ignore Higher Areas** field is set to N.

Field	Description
Include related applications	An option to specify the baselines you want the audit to include.
	Omit this field (Default) and the area audit will make use of the baselines of applications attached to the release area.
	Select this and all related applications as well as the baselines belonging to applications attached to the release are to be included.
	NOTE Area audit will run longer as the number of baselines included in the release is increased.
Auto resolve out of synch conditions	Type an option to specify how you want audit to resolve out-of-synch conditions:
	Select to report out-of-synch conditions and submit recompile and relink jobs to resolve them.
	Omit to report out-of-synch conditions but to not resolve them.
Job Statement Information	Valid job card information for the batch job.

Type in your options and press **ENTER**. The area audit job is submitted.

Area Audit Job Steps and Programs

This table lists the steps and programs in an area audit job and describes the function of each.

Job Step	Program	Description
DELETE1	IDCAMS	Delete 10 area audit sequential files that are output by program CMNRA000 in the next step.
RLSAUDT	CMNRA000	Release Area Audit ■ Collect and analyze information about release libraries and components in the release area, areas in the chain of next areas in the release, areas in prior releases, and baseline libraries. ■ Detect out-of-sync conditions and assign error numbers. ■ Initiate auto resolve jobs. ■ Output 10 sequential files of release, component, and audit data for reporting.
DELETE1	IDCAMS	Delete 10 area audit report sequential files that are output by sort program ICETOOL in the next step.
AUDSORT	ICETOOL	Sort 10 area audit report sequential files simultaneously.

Job Step	Program	Description
RARTM	CMNRARTM	Populate Area Audit Db2 Tables ■ Delete data for the release/area being audited from area audit report Db2 tables. ■ Load 10 area audit Db2 tables with sorted data from audit program CMNRA000: CMNx.CMNDIRSRC CMNx.CMNDIRLOD CMNx.CMNCOPS CMNx.CMNCOPSCPY CMNx.CMNCLOD CMNx.CMNCLODLOD CMNx.CMNCLODOBJ CMNx.CMNCLCT CMNx.CMNCLCTLOD CMNx.CMNERRORS
RARPT	CMNRARPT	Release Audit Report ■ Format the data in the 10 area audit Db2 tables into the Release Audit Report. ■ Set audit return code.

Notes

■ All area audit analysis and error detection is performed by program CMNRA000.

■ The audit return code is set by CMNRA000 based on the highest error severity, which is determined by error number.

■ If your data center uses Syncsort instead of DFSORT, ICETOOL is an alias for SYNCTOOL, a utility equivalent to ICETOOL. If this alias is not available, ask your systems programmer to contact Syncsort Inc. for a fix.

Sample Audit Report Program CMNRARPT

Serena provides sample program CMNRARPT that formats audit information from the area audit Db2 tables into a report that looks similar to the package audit report produced by the base ChangeMan ZMF product.

CMNRARPT performs no analysis of component relationships; all relationship analysis is performed by release area audit program CMNRA000 before the Db2 tables are loaded.

Program CMNRARPT is written in COBOL so you can modify it to display area audit information in any format you want. You may include additional data from the area audit Db2 tables. For information about area audit Db2 tables, see Appendix A, "" on page 347.

You may also call Serena XML Services from the reporting program to incorporate additional information in the audit report. See the *ChangeMan ZMF XML Services Getting Started Guide.*

The release audit report produced by sample program CMNRARPT includes these sections.

■ Directory information for non-load components

■ Directory information for load components

■ Copybook within Source

- NCAL Loads within composite loads

- Object components within composite loads

- Summary

- Recommendations

An example of the report produced by CMNRARPT follows.

```
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    1
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> Description of Member from Directory Entry for Lib Type-(LST)      *
    *****************************************************************************************************************
    *------------- P r e v i o u s   V e r s i o n -------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
      Name   Build   Area        Changed       Release  Tso-id          Name   Build Appl/Pkg#    Changed       Size VV.MM Tso-ID
    _____         _____
    SMITHIES _____   _____   2016-02-17 06.55 _____  SERS            SMITHIES       DEMO003359 2016-02-18 09.17  535 02.01 SNEVIN
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    2
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> Description of Member from Directory Entry for Lib Type-(SRC)      *
    *****************************************************************************************************************
    *------------- P r e v i o u s   V e r s i o n -------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
      Name   Build   Area        Changed       Release  Tso-id          Name   Build Appl/Pkg#    Changed       Size VV.MM Tso-ID
    _____         _____
    SMITHIES _____   _____   2016-02-17 06.54 _____  SNEVIN          SMITHIES       DEMO003359 2016-02-18 09.17    7 02.01 SNEVIN
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    3
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> Description of Member from Directory Entry for Lib Type-(LOD)      *
    *****************************************************************************************************************
    *------------- V e r s i o n   L i b r a r y ---------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
      Name    Size    Linkdate  Setssi Build  Area   Release          Name    Appl/Pkg#   Build   Size   Linkdate   Setssi   AC
    _____         _____
    SMITHIES 00000003 2016-02-17 699410C1                    ERR0315! SMITHIES DEMO003359            32 2016-02-18 699583A4  00
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    4
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> Copybook (CPY) Members within Source (SRC) Code                   *
    *****************************************************************************************************************
    *------------- V e r s i o n   L i b r a r y ---------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
    Copybook                                                  Source  Copybook Lib
    Name   Build   Area        Changed       Release  Tso-id   Name    Name   Type  Build  Appl/Pkg#       Changed       Tso-id
    _____         _____
    NO COPS RECORDS FOUND
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    5
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> NCAL (NCL) Loads within Composite Load Module (LOD)               *
    *****************************************************************************************************************
    *------------- V e r s i o n   L i b r a r y ---------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
    Called   Module                                           Calling Called Lib
    Module    Size    Linkdate  Setssi Build  Area   Release  Module  Module Type Appl/Pkg#  Build   Size   Linkdate   Setssi
    _____         _____
             32 2016-02-17 699410C1                    SMITHIES        LOD  DEMO003359            32 2016-02-18 699583A4
    INGRAM    8 2016-02-22 699A8958                    ERR0315!
    LUMLEY    8 2016-02-22 699A9EBF                    ERR0315!
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    6
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> Object (OBJ) Components within Composite Load Module (LOD)        *
    *****************************************************************************************************************
    *------------- V e r s i o n   L i b r a r y ---------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
    Object        Changed Date Module                          Calling Object Lib                      Changed date Module
    Name   Size   /Linkdate  Setssi Build  Area   Release      Module  Name   Type Appl/Pkg# Build  Size  /Linkdate   Setssi
    _____         _____
    NO COBJ RECORDS FOUND
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    7
                               **************************(Release Area Processing)******************************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> LCT Components which generate named executables                   *
    *****************************************************************************************************************
    *------------- V e r s i o n   L i b r a r y ---------------*       *----------------- A r e a   L i b r a r y -----------------*
    ************************************************************          ************************************************************
    Target  Module  Change/                            LCT     Target Lib                          Change/
    Module   Size   Linkdate  Setssi Build  Area   Release Cmponent Module Type Appl/Pkg# Build  Size  Linkdate   Setssi
    _____         _____
    NO CLCT RECORDS FOUND
    Change Man Release Audit Report        Thursday  April    21,2016   (2016/112) 02:41:58                              PAGE:    8
                        ************************(Release Area Processing - HFS Components)*******************
                   *Release Identifier      ===> R4000110 Created: 20160212   Release Install Date ===> 20160214  *
                   *Area Identifier          ===> START                        Area Status          ===> UNBLOCKED *
                   *Component analysis type ===> Description of Member from Directory Entry for Lib Type-(SRC)      *
```

```
**************************************************************************************************
*------------- P r e v i o u s   V e r s i o n ---------------*     *--------------- A r e a   L i b r a r y ----------------*
**************************************************************************************************
Component Name
          Release      Area        Changed           ID         Appl/Pkg#     Changed             Size       ID
          _____  _____  _____  _____   _____  _____  _____  _____
NO DIRSRC HFS RECORDS FOUND
     Change Man Release Audit Report          Thursday  April    21,2016   (2016/112) 02:41:58                    PAGE:    9
                        *********************(Release Area Processing - HFS Components)*********************
                        *Release Identifier     ===> R4000110 Created: 20160212   Release Install Date ===> 20160214   *
                        *Area Identifier         ===> START                       Area Status          ===> UNBLOCKED *
                        *Component analysis type ===> Description of Member from Directory Entry for Lib Type-(LOD)     *
**************************************************************************************************
*------------- P r e v i o u s   V e r s i o n ---------------*     *--------------- A r e a   L i b r a r y ----------------*
**************************************************************************************************
Component Name
          Timestamp        Size     Release   Area                     Appl/Pkg#     Timestamp           Size
          _____ _____  _____  _____                  _____  _____  _____
NO DIRLOD HFS RECORDS FOUND
     Change Man Release Audit Report          Thursday  April    21,2016   (2016/112) 02:41:58                    PAGE:   10
                        *********************(Release Area Processing - HFS Components)*********************
                        *Release Identifier     ===> R4000110 Created: 20160212   Release Install Date ===> 20160214   *
                        *Area Identifier         ===> START                       Area Status          ===> UNBLOCKED *
                        *Subcomponent relationships to libtype-(HFS)                                                   *
**************************************************************************************************
*------------- P r e v i o u s   V e r s i o n --------------*     *--------------- A r e a   L i b r a r y ----------------*
**************************************************************************************************
>>Component Name -> Subordinate Name
          Timestamp        Size     Area     Release           Libtype Appl/Pkg#     Timestamp           Size
          _____ _____  _____  _____           _____ _____  _____  _____
NO CLOD HFS RECORDS FOUND
     Change Man Release Audit Report          Thursday  April    21,2016   (2016/112) 02:41:58                    PAGE:   11
                                           Legend and Summary Report
The area level of audit chosen at this point is 0 -
    Audit is recommended but entirely optional.
Error Conditions Detected:
    ERR0315! (BASELINE SUB-CMPNT HAS A MORE RECENT DATE THAN COMPOSITE)          ===>   0002
Highest return code encountered                  ===>     8.
Area START     passed the Audit with a return code of    8.
     Change Man Release Audit Report          Thursday  April    21,2016   (2016/112) 02:41:58                    PAGE:   12
                                        Recommendation Summary Report
Listed below are some solutions to resolving error situations that have
been detected within this audit report.

    ERR0315! THE FIRST SUB-COMPONENT (SUBRTN) FOUND IN THE RELEASE
      AREA/BASELINE SEARCH CONCATENATION IS IN BASELINE. IT HAS A CHANGE DATE WHICH
      IS LATER THAN THE COMPOSITE COMPONENT IN THE AUDITED AREA.
      REBUILD THE COMPOSITE IN THE AUDITED AREA TO INCLUDE THE UPDATED SUB-COMPONENT
      FROM BASELINE.

    End of job; RC = 08
Audit Report produced by CMNRARPT dated 07/08/14 07.32.02
**************************** BOTTOM OF DATA **************************************************
```

Area Audit Error Numbers

Release area audit program CMNRA000 assigns a four-digit error number to each type out-of-synch condition.

Area audit error numbers are divided into ranges:

Error Number Range	Description
000-099	Informational messages, including issues outside the audited area
100-199	Warning messages
200-299	Reserved for future development
300-399	Out-of-synch conditions between components in the audited area and components outside the audited area in the chain of next areas, in areas of prior releases, and in baselines.
400-499	Out-of-synch conditions between components in the audited area.

Area audit error numbers are described in the topics that follow:

Error number descriptions contain abbreviations that represent library like-types.

Abbreviation	Description
CPY	CPY or Like-copy library types.
LCT	LCT or Like-link control library types.
LOD	LOD or Like-load library types.
NCL	Like-NCAL library types.
OBJ	Like-object library types.
SRC	SRC or Like-source library types.

Error Number List

Area audit error numbers are shown here in sequential order.

002	Unknown to ChangeMan		
003	ISPF statistics missing		
099	Potential error that relates to components that are outside of and have no bearing on the area being audited. This message is informational.		
100	Identical components (duplicates)		
300	CPY in area eligible for use but not used by SRC	CPY is in chain of next areas	SRC is in audited area

301	CPY in area eligible for use but not used by SRC	CPY is in prior release	SRC is in audited area
302	CPY in area eligible for use but not used by SRC	CPY is in baseline	SRC is in audited area
303	CPY has later date than SRC	CPY is in chain of next areas	SRC is in audited area
304	CPY has later date than SRC	CPY is in prior release	SRC is in audited area
305	CPY has later date than SRC	CPY is in baseline	SRC is in audited area
306	CPY has later date than SRC	CPY is in audited area	SRC is in chain of next areas
307	CPY has later date than SRC	CPY is in audited area	SRC is in prior release
308	CPY has later date than SRC	CPY is in audited area	SRC is in baseline
310	NCL in area eligible for use but not used by composite LOD	NCL is in chain of next areas	LOD is in audited area
311	NCL in area eligible for use but not used by composite LOD	NCL is in prior release	LOD is in audited area
312	NCL in area eligible for use but not used by composite LOD	NCL is in baseline	LOD is in audited area
313	NCL has later date than composite LOD	NCL is in chain of next areas	LOD is in audited area
314	NCL has later date than composite LOD	NCL is in prior release	LOD is in audited area
315	NCL has later date than composite LOD	NCL is in baseline	LOD is in audited area
316	NCL has later date than composite LOD	NCL is in audited area	LOD is in chain of next areas
317	NCL has later date than composite LOD	NCL is in audited area	LOD is in prior release
318	NCL has later date than composite LOD	NCL is in audited area	LOD is in baseline
320	OBJ in area eligible for use but not used by composite LOD	OBJ is in chain of next areas	LOD is in audited area
321	OBJ in area eligible for use but not used by composite LOD	OBJ is in prior release	LOD is in audited area
322	OBJ in area eligible for use but not used by composite LOD	OBJ is in baseline	LOD is in audited area

323	OBJ has later date than composite LOD	OBJ is in chain of next areas	LOD is in audited area
324	OBJ has later date than composite LOD	OBJ is in prior release	LOD is in audited area
325	OBJ has later date than composite LOD	OBJ is in baseline	LOD is in audited area
326	OBJ has later date than composite LOD	OBJ is in audited area	LOD is in chain of next areas
327	OBJ has later date than composite LOD	OBJ is in audited area	LOD is in prior release
328	OBJ has later date than composite LOD	OBJ is in audited area	LOD is in baseline
330	SRC has later date than LOD	SRC is in chain of next areas	LOD is in audited area
331	SRC has later date than LOD	SRC is in prior release	LOD is in audited area
332	SRC has later date than LOD	SRC is in baseline	LOD is in audited area
340	SRC has later date than NCL	SRC is in chain of next areas	NCL is in audited area
341	SRC has later date than NCL	SRC is in prior release	NCL is in audited area
342	SRC has later date than NCL	SRC is in baseline	NCL is in audited area
350	SRC has later date than OBJ	SRC is in chain of next areas	OBJ is in audited area
351	SRC has later date than OBJ	SRC is in prior release	OBJ is in audited area
352	SRC has later date than OBJ	SRC is in baseline	OBJ is in audited area
400	CPY has later date than SRC	CPY is in audited area	SRC is in audited area
401	NCL has later date than composite LOD	NCL is in audited area	LOD is in audited area
402	OBJ has later date than composite LOD	OBJ is in audited area	LOD is in audited area
404	SRC has later date than LOD	SRC is in audited area	LOD is in audited area
406	SRC has later date than NCL	SRC is in audited area	NCL is in audited area
408	SRC has later date than OBJ	SRC is in audited area	OBJ is in audited area
411	Actual/designated procedure discrepancy		
412	Copybook deleted		
413	NCL subroutine deleted		

414	Object code subroutine deleted		
416	Activity file not checked in		
417	Version regression		
418	Area compile for source component not completed (auto resolve)		
420	CPY in area eligible for use but not used by SRC	CPY is in audited area	SRC is in audited area
421	NCL is area eligible for use but not used by composite LOD	NCL is in audited area	LOD is in audited area
422	OBJ in area eligible for use but not used by composite LOD	OBJ is in audited area	LOD is in audited area

Error Numbers By Relationship

Area audit errors numbers are shown here in matrixes that detail the relationship evaluated.

CPY Has Later Date than SRC

		Included CPY Component Is In:			
		Audited Area	**Chain Of Next Areas**	**Prior Release**	**Baseline**
SRC Module Is In:	**Audited Area**	ERR(400)	ERR(303)	ERR(304)	ERR(305)
	Chain Of Next Areas	ERR(306)	ERR(099)	ERR(099)	ERR(099)
	Prior Release	ERR(307)	ERR(099)	ERR(099)	ERR(099)
	Baseline	ERR(308)	ERR(099)	ERR(099)	ERR(099)

CPY in Area Is Not Used by SRC

This matrix differs from the preceding matrix in that the copybook timestamp is earlier than the source.

		Included CPY Component Is In:			
		Audited Area	**Chain Of Next Areas**	**Prior Release**	**Baseline**
SRC Module Is In:	**Audited Area**	ERR(420)	ERR(300)	ERR(301)	ERR(302)
	Chain Of Next Areas				
	Prior Release				
	Baseline				

NCL Has Later Date than Composite LOD

<table>
<tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="4">Included NCL LOD Component Is In:</td></tr>
<tr><td>Audited Area</td><td>Chain Of Next Areas</td><td>Prior Release</td><td>Baseline</td></tr>
<tr><td rowspan="4">LOD Module Is In:</td><td>Audited Area</td><td>ERR(401)</td><td>ERR(313)</td><td>ERR(314)</td><td>ERR(315)</td></tr>
<tr><td>Chain Of Next Areas</td><td>ERR(316)</td><td>ERR(099)</td><td>ERR(099)</td><td>ERR(099)</td></tr>
<tr><td>Prior Release</td><td>ERR(317)</td><td>ERR(099)</td><td>ERR(099)</td><td>ERR(099)</td></tr>
<tr><td>Baseline</td><td>ERR(318)</td><td>ERR(099)</td><td>ERR(099)</td><td>ERR(099)</td></tr>
</table>

NCL in Area Is Not Used by Composite LOD

This matrix differs from the preceding matrix in that the NCAL timestamp is earlier than the composite load.

<table>
<tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="4">Included NCL LOD Component Is In:</td></tr>
<tr><td>Audited Area</td><td>Chain Of Next Areas</td><td>Prior Release</td><td>Baseline</td></tr>
<tr><td rowspan="4">LOD Module Is In:</td><td>Audited Area</td><td>ERR(421)</td><td>ERR(310)</td><td>ERR(311)</td><td>ERR(312)</td></tr>
<tr><td>Chain Of Next Areas</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Prior Release</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Baseline</td><td></td><td></td><td></td><td></td></tr>
</table>

OBJ in Area Has Later Date than Composite LOD

<table>
<tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="4">Included OBJ Component Is In:</td></tr>
<tr><td>Audited Area</td><td>Chain Of Next Areas</td><td>Prior Release</td><td>Baseline</td></tr>
<tr><td rowspan="4">LOD Module Is In:</td><td>Audited Area</td><td>ERR(402)</td><td>ERR(323)</td><td>ERR(324)</td><td>ERR(325)</td></tr>
<tr><td>Chain Of Next Areas</td><td>ERR(326)</td><td>ERR(099)</td><td>ERR(099)</td><td>ERR(099)</td></tr>
<tr><td>Prior Release</td><td>ERR(327)</td><td>ERR(099)</td><td>ERR(099)</td><td>ERR(099)</td></tr>
<tr><td>Baseline</td><td>ERR(328)</td><td>ERR(099)</td><td>ERR(099)</td><td>ERR(099)</td></tr>
</table>

OBJ in Area Is Not Used by Composite Load

This matrix differs from the preceding matrix in that the object timestamp is earlier than the composite load.

		Included OBJ Component Is In:			
		Audited Area	**Chain Of Next Areas**	**Prior Release**	**Baseline**
LOD Module Is In:	**Audited Area**	ERR(422)	ERR(320)	ERR(321)	ERR(322)
	Chain Of Next Areas				
	Prior Release				
	Baseline				

SRC Has Later Date than LOD

		SRC Component Is In:			
		Audited Area	**Chain Of Next Areas**	**Prior Release**	**Baseline**
LOD Module Is In:	**Audited Area**	ERR(404)	ERR(330)	ERR(331)	ERR(332)
	Chain Of Next Areas		ERR(099)		
	Prior Release			ERR(099)	
	Baseline				ERR(099)

SRC Has Later Date than NCAL

		SRC Component Is In:			
		Audited Area	**Chain Of Next Areas**	**Prior Release**	**Baseline**
NCAL Module Is In:	**Audited Area**	ERR(406)	ERR(340)	ERR(341)	ERR(342)
	Chain Of Next Areas		ERR(099)		
	Prior Release			ERR(099)	
	Baseline				ERR(099)

SRC Has Later Date than OBJ

		SRC Component Is In:			
		Audited Area	**Chain Of Next Areas**	**Prior Release**	**Baseline**
OBJ Module Is In:	**Audited Area**	ERR(408)	ERR(350)	ERR(351)	ERR(352)
	Chain Of Next Areas		ERR(099)		
	Prior Release			ERR(099)	
	Baseline				ERR(099)

Area Audit Return Codes

Area audit return codes are set depending on the error numbers.

Return Code	Description of Error
00	No out-of-sync conditions and no duplicates.
04	No out-of-sync conditions, but at least one duplicate between a component in the audited area and the version in motion or the baseline version.
08	Out-of-sync conditions between components outside of the audited area in libraries for the chain of next areas, in prior release area libraries, and in baseline libraries.
12	Out-of-sync conditions between components within the audited area.
16	Db2 error - SQLCA is formatted by DSNTIAR and written to SYSOUT.
20	Audit failed to process successfully.

NOTE The audit return code is also written to the Activity Log. Select Activity Log Code 50 to display this information. See the *ChangeMan ZMF User's Guide* for a description of the Activity Log.

Auto Resolve

When area audit is initiated with the Auto Resolve option, it generates and submits stage, recompile, and relink jobs to fix the out-of-sync errors it detects. Components that are rebuilt or newly created by auto resolve are put in the area libraries for the release area being audited.

> **NOTE** When auto resolve submits recompile or relink jobs for components in other areas and in baseline libraries, new build components are written to libraries in the audited area.

Auto Resolve Scope

When you request auto resolve, you have three choices for the scope of auto resolve processing:

- ALL - Submit stage, recompile, and relink for all out-of-sync errors that can be resolved.

- SUB - Submit stage, recompile, and relink for subprograms only.

- COM - Submit stage, recompile, and relink for statically linked composite load modules or load that is otherwise fully resolved and executable.

Auto resolve is unable to create JCL for build jobs and submit them in a series of dependent jobs that guarantee that the hierarchy of subprogram and statically linked composite loads will be built with no remaining out-of-sync errors.

If you know that you have a very simple structure in your release area, you can request auto resolve with an ALL scope.

However, it is usually most efficient to run auto resolve with a SUB scope to build subprogram components first, then run area audit again with an auto resolve scope of COM to build composite components.

Keeping Package and Area Libraries Aligned

Release management centers on the contents of area libraries. Package staging libraries feed components into the release process with check-in to a starting area, but the objective of release area auto resolve is to fix out-of-sync problems in area libraries.

However, auto resolve keeps attached packages and their contents aligned with the contents of the area being audited. Area components that must be restaged are marked INCOMP in the originating package until the build process completes successfully and the build products are copied to the package staging libraries as well as area libraries. If recompiles or relinks are required, they are also marked INCOMPL in an attached package until the build process completes successfully and new components are copied to package staging libraries and area libraries, and they are marked ACTIVE in the package.

Test Area for Auto Resolve

After package components are checked in to a release, the components in the package can be altered, depending on area rules. To prevent auto resolve from overlaying package

components that have been changed or creating orphans when package components have been deleted, Test Area is automatically executed in the area before a request for auto resolve is executed.

If test area fails, the area audit job fails with RC=12 and the following messages are displayed:

```
CMR1005I - Autoresolve requested.
CMR1004A - Audit failed - Audited area must pass TestArea function if autoresolve
is requested.
CMR1506I - Release R041218/ACCTPAY and package components do not match.
```

It is particularly important that you execute RUNSTATS after the initial loading of the tables. If Db2 chooses not to use the indexes to access the tables, performance may be unacceptable.

Customizing Release Area Audit

You can customize the ERO release area audit to fit your needs in two ways:

- Change the content and format of the release audit report - Modify sample report program CMNRARPT, which is written in COBOL and delivered in the CMNZMF ASMSRC library, or write your own report program. See "Sample Audit Report Program CMNRARPT" on page 315.

- Change the description and handling of the area audit error numbers assigned by program CMNRA000 - Modify the contents of Db2 table CMNERRORTYPES.

These are the columns in Db2 table CMNERRORTYPES.

Table Column	Description
INT_ERROR_NUMBER	Error number - See "Area Audit Error Numbers" on page 318.
TXT_ERROR_TYPE	Error type - Valid values: E Error W Warning I Information
TXT_ERROR_AUTO	Allow auto resolve N Suppress auto resolve for this error number. Y [Any value except N] Allow auto resolve if this error number would ordinarily trigger it.
INT_ERROR_SEVERITY	Audit return code (severity of this error condition) See "Area Audit Return Codes" on page 324.
TXT_SHORT_DESC	Short description
MEM_LONG_DESC	Long description
MEM_RESOLUTION	Error resolution text

Table CMNERRORTYPES is populated by job CMNLDERT from comma-delimited data in member ERRORTYP in the delivered CMNZMF ERR library. Job CMNLDERT includes DROP /

CREATE for table CMNERRORTYPES, so the easiest way to modify the table data is to modify the text in ERRORTYP and run job CMNLDERT.

This is a sample record from member ERRORTYP (wrapped to multiple lines).

```
411,"E","Y",12,"DESIGNATED COMPILE PROCEDURE NOT USED","SOURCE COMPONENT HAS NOT BEEN
       COMPILED WITH THE DESIGNATED COMPILE PROCEDURE AND/OR COMPILE/BINDER/USER
       OPTIONS.","REBUILD THE SOURCE USING THE DESIGNATED COMPILE PROCEDURE."
```

Preserve the original content of member ERRORTYP by copying the vendor version from the CMNZMF ERR library into a custom ERR library, then make your changes in the custom library.

> **NOTE** To see what audit program CMNRA000 is doing, use the TRC= SYSIN parameter:
> TRC=YES - Writes informational messages with timestamps to SYSPRINT.
> TRC=BAS - Writes informational messages to SYSPRINT with timestamps and listings of baseline member names being used. Note that TRC=BAS produces large amounts of output.

Area Audit Db2 Considerations

Audits for Large Releases

When you audit a release area, all data from the previous audit for that area is deleted from the area audit Db2 tables, and then data for the new audit is inserted. An area audit may delete and insert hundreds of thousands of rows for a large release.

Job CMNDB2RR can be run before an area audit to expedite the area audit run time. The CMNDB2RR job reorganizes the area audit Db2 tales and discards rows for the target area. See Appendix A, "Removing Unneeded Component History" on page 348 for information on this job.

Monitoring Db2 Catalog Statistics

All the Db2 tables are indexed for performance. However, it is quite usual for Db2 to choose not to use the indexes if it does not have up-to-date information on the data distribution in the tables. To provide this information and to update catalog statistics, your DBA should periodically monitor the Db2 catalog statistics for the ERO Db2 tablespaces, tables, and indexes and execute the Db2 RUNSTATS utility against these tables on a regularly scheduled basis.

Repair ERR0417 Prior Release Version Regression

If a component in your current release is also in a prior release, ERO audit requires that the meta data for the component be consistent with the following:

- The component in the current release was checked out from that prior release.

- No changes were made to the prior release component after checkout to the current release package.

When ERO audit finds data that indicates that these requirements are not met, it yields an ERR0417! error and RC=12.

As with other audit errors, the code in the prior release and current release components may be what you want (for example, you have changed both versions to fix a newly discovered defect), but you must take some action to make the meta data pass the tests applied by ERO area audit.

You have two options to resolve an ERR0417!

- Check out the component again from the prior release.

- Use the ERO release version compatibility confirmation facility to help you find, research, and resolve prior release version regression without repeating the checkout from prior release.

Check Out Component And Reapply Changes

To resolve an ERR0417 in area audit, you can check out the component again from the prior release and reapply the changes you made previously in the current release. Assuming that the code in the prior release component and the code in the current release component is what you want, you can to execute the following procedure:

1 Save the current release component to a file outside of ZMF.

2 In the current release package, use **C3-Checkout** and option **3 - Checkout from Prior Release** to overlay the current release component in the package staging library.

3 Edit the component in the current release package and overlay the checked-out code with the code you saved outside of ZMF.

4 Verify the current release component code using the compare report as you exit the edit-in-stage session.

5 Checkin the current release package component into the current release starting area.

6 Checkin the component to higher release areas, overlaying the component that gave you ERR0417!

Use Prior Release Version Compatibility Confirmation Facility

The prior release version compatibility confirmation facility was introduced in ZMF 7.1.2 to help you resolve prior release version regression without making you check out the

component again from prior release and reapply your changes in the current release. Using this facility, you can:

1 Find the prior release component that makes the current release version a potential regression.

2 Compare the prior release component to the version in your current release to see code that might require forward-fitting into the current release version.

3 After verifying that the code in the prior release component and the code in the current release component are what you want, reset the metadata for the component to eliminate the ERR0417!

Find Prior Release Component Causing ERR0417

Execute these steps to find the prior release component that makes ERO audit flag a current release component with ERR0417:

IMPORTANT! The services that power this facility are resource intensive. The most efficient way to discover multiple prior release regressions is to run ERO audit. If components that were checked out from a prior release have been checked in to higher release areas, run an area audit with **Ignore Higher Areas** set to **Yes**.

1 The prior release version compatibility function is an option on the **Release Management Checkout Options** panel. Follow these steps to access the prior release version compatibility function:

a Type **=7** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

b Type release selection criteria in fields on the **Release List Specifications Parameters** panel, or leave the fields blank, and press **Enter**.

c The **Release List** panel is displayed.

```
CMNRMRLF                        Release List                    Row 1 to 2 of 2
Command ===> _____     Scroll ===> CSR

   Release   Sta  Install   Work request     Dept      Aud  Creator  Pkgs
__ FIN6410   DEV  20160328  WR 9010          FINANCE        USER015  00001
__ FIN6430   DEV  20160328  WR 9030          FINANCE        USER015  00004
***************************** Bottom of data ******************************
```

The **Release List** panel shows releases that:

• Satisfy the selection criteria you typed on the **Release List Parameters** panel.

• Have change packages attached to them.

d On the **Release List** panel, type line command **PK** on the release row to select the current release that contains the component that ERO audit flagged with ERR0417! Press **Enter**, and the *release* **- Release Package List** panel is displayed.

```
CMNRMPLF                 FIN6430 - Release Package List         Row 1 to 1 of 1
Command ===> _____     Scroll ===> CSR

   Package    Sta  Area     Install DT/TM  Last Promotion    Aud Chkd In
__ ACTP000032 DEV  ACCTPAY  20160429 2359  SERT6    S6P1IT   20       N
***************************** Bottom of data ******************************
```

The panel shows all packages that are attached to the release that you selected.

The fields on the *release* **- Release Package List** panel are described on .

e On the *release* **- Release Package List** panel, type **C3** in the line command of the package that contains the component that ERO audit flagged with ERR0417! and press **Enter**. The **Release Management Checkout Options** panel is displayed.

```
CMNRCKOP              Release Management Checkout Options
Option ===> _____

     Package: ACTP000032    Release: FIN6430     Area: ACCTPAY

  1 Checkout from current package release and area
  2 Checkout from current package release other areas
  3 Checkout from a prior release
  4 Checkout latest components from consolidated list
  5 Confirm prior release version compatibility
```

f On the **Release Management Checkout Options** panel, choose **5 - Confirm prior release version compatibility** and press **Enter**. The **Prior Release Component Query Criteria** panel is displayed.

```
CMNRQC90            Prior Release Component Query Criteria
Command ===> _____

        Package: ACTP000032     Release: FIN6430  Area: ACCTPAY

Component name . . . . _____
Component type . . . . ___

Enter "/" to select option
  / Mixed case
```

This table describes the fields on the **Prior Release Component Query Criteria** panel.

Field	Description
Command	Type a command, or leave Command blank.
	CANCEL Return to the previous panel without processing. (Abbreviation: C)
Package:	Displays the name of the current package.
Release:	Displays the Release ID of the current release.
Area:	Displays the name of the starting area for the package.
Component Name	Type a full component name or a pattern.
Component Type	Type the library type of the component.
Mixed case	This field is used to determine the processing of lower case input in the **Component Name** field.
	Omit to fold **Component Name** input to upper case regardless of the case that you type.
	Select to process **Component Name** input exactly as you type it, upper and lower case.

2 On the **Prior Release Component Query Criteria** panel, type the component name and library type of the component that ERO audit flagged with ERR0417! in your current release.

> **NOTE** You can type a pattern in the **Component Name** field, but processing multiple components may consume excessive resources and elapsed time.

Press **Enter** and the **Prior Release Version Regression Component List** panel is displayed.

```
CMNCK090        Prior Release Version Regression Component Lis Row 1 to 1 of 1
COMMAND ===> _____ Scroll ===> CSR

 Current - Package: ACTP000040 Release: S4712050 Area: ACCTPAY  Libtype: JCL

 Component             --------------------- PRIOR ---------------------------
                       Release  Area     Package   Changed            User
_ ACPJCL10         +   S4712010 ACCTPAY  ACTP000037 2015/12/09 02:43:33 USER239
***************************** Bottom of data *****************************
```

This panel displays a list of components that have version regression issues with prior releases.

This table describes the fields on the **Prior Release Version Regression Component List** panel.

Field	Description	
Line Command	S	Show prior release regression details.
	C	Compare the prior release component to the current release component.
	P	Process and resolve the prior release regression.
Current	Package	Displays the name of the package in the current release.
	Release	Displays the Release ID of the current release.
	Area	Displays the name of the starting area for the package in the current release.
	Libtype	Displays the library type of the component in the current release.
Component	Displays the component name of the prior release version regression.	
Prior	Release	Displays the Release ID of the prior release.
	Area	Displays the name of the starting area for the package in the prior release.
	Package	Displays the name of the package in the prior release.
	Changed	Displays the date and time that the component was changed in the prior release.
	Userid	Displays the user ID of the person who checked in the component into the starting area of the prior release.

On the **Prior Release Component Query Criteria** panel, type one of the following line commands on a listed component:

• Type **S** to show details of the prior release regression. See .

- Type **C** to compare the component in the prior release to the component in the current release. See "Compare Prior Release Regression Components" on page 333.

- Type **P** to process and resolve the prior release regression. See "Resolve Prior Release Regression" on page 334.

Show Prior Release Regression Details

When you use line command **S** on a component listed on the **Prior Release Version Regression Component List** panel, the **Prior Release Version Regression Component Details** panel is displayed.

```
CMNCK091      Prior Release Version Regression Component Details
Command ===> _____ Scroll ===> CSR

 Component:   ACPJCL10                                  +
 Libtype:     JCL

              Prior                     Current
 Release:     S4712010                  S4712050
 Area:        ACCTPAY                   ACCTPAY
 Package:     ACTP000037                ACTP000037
 Hash token:  216E93EE000004CE          E830C9970000047C
 User:        USER239                   USER239
 vv.mm:       02.03                     03.01
 Changed:     2012/10/09 02:43:33       2012/10/08 16:53:51
 Checked in:  2012/10/09 02:43:51       2012/10/08 16:54:32
```

This panel expands on the information displayed on the **Prior Release Version Regression Component List** panel, showing you attributes of the selected component in the current release and in the prior release. For each field type, the values for the prior release version are displayed on top of the values for the current release version.

NOTE This panel is for information only. You will not use this panel to decide what action to take for a potential prior release regression.

All fields except **Package** and **Hash token** compare values for the current area component to values for the prior release component as they are right now. The prior values for the **Package** and **Hash token** fields are for the component in the prior release right now, but the current values are the values that existed when the component in the current area was last checked out.

The information in the **Package** and **Hash token** fields is what ERO audit uses to detect potential prior release version regression.

Compare Prior Release Regression Components

When you use line command **C** on a component listed on the **Prior Release Version Regression Component List** panel, the **Prior Release Version Regression Comparison** panel is displayed.

```
CMNCK093           Prior Release Version Regression Comparison
Command ===> _____  Scroll ===> CSR
    Prior release version (SYSUT1):

    CMNTP.S4712010.ACCTPAY.ACTP.JCL(ACPJCL10)                        +

    Current release version (SYSUT2):

    CMNTP.S4712050.ACCTPAY.ACTP.JCL(ACPJCL10)                        +
```

This panel shows the area libraries and members in the prior release and the current release that will be compared.

NOTE The comparison report on the next panel will show only the temporary ZMF datasets where the members are copied to execute the compare. You can record the library and member names on the **Prior Release Version Regression Comparison** panel if you want to execute a compare outside of ZMF.

Press **Enter** to proceed to the comparison report, or type **END** or press **PF3** to return to the **Prior Release Version Regression Component List** panel without executing the compare.

```
 ISRBROBA  CMNTP.A0191.#CA4ADF1.#6033A1B.OUTLIST      Line 00000000 Col 001 080
 Command ===>                                              Scroll ===> CSR
******************************** Top of Data ********************************
         S E R C M P A R  (MVS - 862 - 20111202) 2   TEXTONLY   TUESDAY OCTOB
SYSUT1=CMNTP.A0191.#CA4ADED.#6359804.STG,SYSUT2=CMNTP.A0191.#CA4ADED.#67B6E69.ST
 . . .
       //* PACKAGE GENL000005 S4.V710T19
       //* PACKAGE ACTP000004 S4.V711
       //* PACKAGE ACTP000027 S4.V71201T4
++++++++<+++.++++1++++.++++2++++.++++3++++.++++4++++.++++5++++.++++6++++.++++7+>
D      //* PACKAGE ACTP000027 S4.V71201T4 2ND EDIT
--------|---.----1----.----2----.----3----.----4----.----5----.----6----.----7--
I      //* PACKAGE ACTP000040 S4.V71201T4
++++++++<+++.++++1++++.++++2++++.++++3++++.++++4++++.++++5++++.++++6++++.++++7+>


       //*
       //JCLSTEP1 EXEC ACPPRC10
       //JCLSTEP2 EXEC PGM=ACPSRC50
SER71I - END OF TEXT ON FILE SYSUT1
SER72I - END OF TEXT ON FILE SYSUT2
SER75I - RECORDS PROCESSED: SYSUT1(15)/SYSUT2(15),DIFFERENCES(1)
SER80I - TIME OF DAY AT END OF JOB: 03:18:26 - CONDITION CODE ON EXIT: 4
```

Use the comparison report to ensure that differences between the prior release component and the current release component are intentional.

Resolve Prior Release Regression

When you use line command **P** on a component listed on the **Prior Release Version Regression Component List** panel, the **Prior Release Version Regression Confirmation** panel is displayed.

```
CMNCK092         Prior Release Version Regression Confirmation
Command ===> _____  Scroll ===> CSR

  Component: ACPJCL10 + Libtype: JCL     Release: S4712050  Area: ACCTPAY

  When this component was last checked out, the version identifying values
  for the component in the 'first found' prior release were

  Package: ACTP000037   Hash token: E830C9970000047C

  Since it was checked out the prior release version of this component has
  been updated and now has the following values

    Package: ACTP000037   Hash token: 216E93EE000004CE

  To confirm that the current area component is 'up to date' with all changes
  made to the prior release simply press enter, else hit pf3 to cancel.

  Enter will cause the first set of values to be replaced by the second.
```

The panel text explains what you are seeing.

If you are certain that the version the component in the current release and the version of the component in the prior release are what you want, press **Enter** to reset the meta data to eliminate the area audit ERR0417!

> ⚠️ **CAUTION!** When you press **Enter** on the **Prior Release Version Regression Confirmation** panel, you are taking responsibility for any code differences between the prior version and the current version. If you are unsure about those differences, rerun the comparison report. See "Compare Prior Release Regression Components" on page 333.

When processing is complete, you are returned to the **Prior Release Component Query Criteria** panel, where the short message "Update complete" is displayed.

```
CMNRQC90   Prior Release Component Query Criteria          Update complete
Command ===> _____

        Package: ACTP000040  Release: S4712050  Area: ACCTPAY

Component name . . . . ACPJCL10
Component type . . . . JCL

Enter "/" to select option
  _ Mixed case
```

Enter the **Component Name** and **Component Type** for the next component that ERO audit flagged with ERR0417!, or press **PF3** repeatedly to return to the ERO panel you want.

NOTE When you adjust meta data for a component using the **Prior Release Version Regression Confirmation** panel, the meta data is changed in the starting area of the current release (the area that the package is attached to). You must check in the component to higher areas to propagate the adjustment.

Chapter 11

Recovering Release Resources and Deleting Releases

This chapter discusses recovering the resources used by ERO and deleting releases.

Introduction

For each release, the ERO Option keeps a large amount of data in Db2 tables. Area libraries for even the simplest release consume at least as much DASD as all of the release packages combined.

When a release is installed, or if you abandon work on a release, you can recover release resources by executing these ChangeMan ZMF functions.

Function	Prerequisites	Actions
DL - Delete Release Libraries	■ No packages attached to release ■ Release status is DEV status	■ Delete release area libraries.
DR - Physical Delete	■ No packages attached to release ■ Release status is DEV or DEL	■ Delete release records from Package Master. ■ Delete release area libraries. ■ Delete release records from Db2 tables.
AD - Archive/Delete Release	■ No packages attached to release ■ Release status is BAS, INS, or DEL	■ Copy release Package Master records and Db2 records to PDS. ■ Delete release records from Package Master. ■ Delete release area libraries. ■ Delete release records from Db2 tables.
MD - Memo Delete	■ No packages attached to release ■ Release status is DEV status	■ Prevents changes to release and areas. ■ Prevents package attach.
Aging Release	■ Status of attached packages are BAS or INS ■ Attached packages are aged ■ Release status is BAS or INS	■ Delete package records. ■ Delete release records from Package Master. ■ Delete release area libraries. ■ Delete release records from Db2 tables.
ARCHIVE2 - Archive Packages and Releases	■ Status of attached packages are BAS or INS ■ Attached packages are aged ■ Component history for attached packages is aged ■ Release status is BAS or INS	■ Delete package records from Package Master ■ Delete component history from Component Master ■ Delete release records from Package Master ■ Delete release records from Db2 tables ■ Add deleted Package Master records to cumulative archive. ■ Add deleted Component Master records to cumulative archive ■ Add deleted Db2 tables rows to cumulative archive PDS

Each of these functions except Aging Release is executed as an option from the **Release List** panel in ERO Administration.

> **NOTE** While Memo Delete does not actually recover resources, it can be considered a precursor to Physical Delete and Archive/Delete since the prerequisites are similar. Memo Delete can be reversed with the UD-Undelete, returning the release to DEV status.

Executing Delete Release Functions in ERO

Follow these steps to access the **Release List** where you execute options that recover release resources and/or delete a release.

1 Type **=A** on the **Command** or **Option** line of any panel in ChangeMan ZMF, then press **Enter.**

2 Type **R** on the **Option** line of the **Administration Options** panel, and press **Enter**.

3 Type **R** on the **Option** line of the **Release Management Administration Options** panel, and press **Enter**.

4 Type release selection criteria in fields on the **Release List Parameters** panel, or leave the fields blank. Press **Enter**, and the **Release List** panel is displayed.

5 The **Release List** panel shows the releases that satisfy the selection criteria you typed on the **Release List Parameters** panel. If you did not enter any selection criteria, the **Release List** panel shows all releases.

```
CMNRMRLS                      Release List                    Row 1 to 5 of 5
Command ===> _____  Scroll ===> CSR

   Release  Sta  Install  Work request      Dept    Aud  Creator  Created
__ FIN6410  DEV  20151219  WR 9010          FINANCE      USER015  20151126
__ FIN6420  DEV  20160116  WR 9020          FINANCE      USER015  20151126
__ FIN6430  DEV  20160220  WR 9030          FINANCE      USER015  20151126
__ FIN6440  DEV  20160227  WR 9030          FINANCE      USER015  20160111
__ FIN6470  DEV  20160527  WR 9030          FINANCE      USER015  20160420
****************************** Bottom of data ******************************
```

6 Type one of these line commands on a release.

- DR - Physical Delete

- MD - Memo Delete

- UD - Undelete

- DL - Delete Release Libraries

- AD - Archive/Delete Release

These options are described at the beginning of this chapter starting on .

7 Press **Enter**.

Archiving Releases

The archive function in the Archive/Delete option is intended to satisfy audit or regulatory requirements for records retention while providing the opportunity to recover resources from a release that is no longer active.

The Archive/Delete function executes two separate processes.

The first process archives release records.

1 Delete the release archive PDS if it already exists.

2 Allocate the release archive PDS with the following name:

erohlq.release.ARCHIVE

where *erohlq* is the Release High Level Qualifier from ERO Global Administration, and *release* is the release name.

3 Copy release records from the Package Master and release records from the ERO Db2 tables to members in the ARCHIVE PDS.

PDS Member	Records Copied From	Db2 Table Type
release name	Package Master release records	N/A
CLCT	Db2 Table CMNCLCT - Link Control Members	Release Audit
CLCTLOD	Db2 Table CMNCLCTLOD - Load (Names) within Link Control Members	Release Audit
CLOD	Db2 Table CMNCLOD - Composite Load Members	Release Audit
CLODLOD	Db2 Table CMNCLODLOD - Load within Load Members	Release Audit
CLODOBJ	Db2 Table CMNCLODOBJ - Object within Load Members	Release Audit
COPS	Db2 Table CMNCOPS - Copy within Source, Source Members	Release Audit
COPSCPY	Db2 Table CMNCOPSCPY - Copy within Source, Copy Members	Release Audit
DIRLOD	Db2 Table CMNDIRLOD - Directory Data for Load Members	Release Audit
DIRSRC	Db2 Table CMNDIRSRC - Directory Data for Non-Load Members	Release Audit
ERRORS	Db2 Table CMNERRORS - Audit Errors for Components	Release Audit
RLSCIM	Db2 Table CMNRLSCIM – Component in Motion	Release Management
RLSHST	Db2 Table CMNRLSHST – Component History Table	Release Management
RLSIAT	Db2 Table CMNRLSIAT – Release I/A Table	Release Management
SYSPUNCH	Db2 load control statements for all tables	N/A

The second process executes the same functions as the PD - Physical Delete option

1 Delete release records from Package Master.

2 Delete release area libraries.

3 Delete release records from Db2 tables.

Aging Releases

There is no aging parameter for a release in Release Configuration. However a release is automatically deleted when the last package attached to the release is aged and deleted by the Housekeeping/Delete function in Global Administration of the base ChangeMan ZMF product.

Therefore, the effective aging days for a release is the highest number of aging days for any package attached to the release.

> **CAUTION!** There is nothing in the sysout from the housekeeping job that ages and deletes package staging libraries and package records to tell you that a release has also been deleted.

See these topics in the *ChangeMan ZMF Administrator's Guide* for information about configuring package aging and running the housekeeping job to age and delete packages.

- **Global Parameters Part 1 of 6** panel (CMNGGP01) in topic "Setting Up Global Parameters" in the chapter titled "Setting Up Global Administration".

- *appl* **Parameters Part 3 of 3** panel (CMNGLP03) in topic "Setting Application Parameters" in the chapter titled "Setting Up Application Administration".

- Topic "Online Housekeeping" in the chapter titled "Setting Up Global Administration".

Aging and Archiving Releases

Batch job ARCHIVE2 combines the package aging and archiving functions in base ZMF job ARCHIVE1 with release archive functions. ERO customers run ARCHIVE2 rather than ARCHIVE1 to age and archive packages and component history, and to archive ERO releases and their associated Db2 table rows.

Note the commented out section at the start that provides sample code to notify users by email or TSOID, only relevant if you are running z/OS 2.3 or later, and JES2.

These are the processing steps in ARCHIVE2.

1 Delete aged package records from the package master

2 Delete aged component history records from the component master

3 Merge deleted component history records into a cumulative component record archive file.

4 Delete release records from the package master.

5 Merge deleted package master records into a cumulative package master archive file.

6 Extract Db2 table records for archived releases into PDS members.

7 Combine extracted Db2 table records into a GDG.

8   Delete Db2 table rows for archived releases.

> **NOTE** Release area libraries are scratched by ZMF online housekeeping (=A.G.H/1) after it scratches all aged staging libraries for packages attached to a release. The **Aging - Staging Datasets** days in application administration must be less than the **Aging - Installed Packages** days so that staging libraries and release area libraries are scratched before package and release records are deleted.

Notes On Archiving Db2 Table Rows

- When you delete or archive a large release, you should execute a REORG on the ERO Db2 tables. (REORG should be included in periodic Db2 table housekeeping.)

- You can execute sample ZMF job ARCDBERO in place of step DB2ICMD in job ARCHIVE2, which executes Db2 program DSNTEP2 to delete Db2 table rows for archived releases. ARCDBERO executes a REORG on each table to strip off archived rows, but it requires more experience to run and restart without risk.

Examples of Delete Release

The ERO and base ChangeMan ZMF functions that recover release resources, archive release records, and delete release have overlapping requirements. This section is a practical guide to using these functions to accomplish your objectives.

Archive and Delete an Installed Release

You cannot recover area library space or Db2 table space until all packages have been detached from a release, and you cannot manually detach packages from an installed release. So, after you have archived a release, you must wait for Housekeeping/Delete to deleted all attached packages and delete the release.

1   Add an "Archive Release" task to the plan for each release. Schedule this task after the release is installed and after you have passed the point where the release could be backed out.

2   Before a release installs, ensure that package aging parameters in ChangeMan ZMF Application Administration for joined applications will provide sufficient time for the "Archive Release" task to be executed before release packages are aged and deleted.

3   When it is time to execute the "Archive Release" task, manually run the **AD - Archive/Delete** Release option from the **Release List** panel in ERO Release Administration (=A.R.R).

4   Ensure that Housekeeping/Delete in Global Administration in the base ChangeMan ZMF product is run periodically to age release packages. When the last attached package is aged and deleted, a release and its resources will be deleted.

Delete an Installed Release Without Archive

Ensure that Housekeeping/Delete in Global Administration in the base ChangeMan ZMF product is run periodically to age release packages. When the last attached package is aged and deleted, a release and its resources will be deleted.

Delete a Release in Progress Without Archive

1 Unblock the release.

2 Unblock all release areas.

3 Demote all promoted release area components.

4 Retrieve all areas.

5 Detach all packages.

6 Execute the **DR - Physical Delete** option from the **Release List** panel in ERO Release Administration

Archive and Delete a Release in Progress

1 Unblock the release

2 Unblock all release areas.

3 Demote all promoted release area components.

4 Retrieve all areas.

5 Detach all packages.

6 Manually execute the **MD - Memo Delete** option from the **Release List** panel in ERO Release Administration to change the release status to DEL

7 Manually execute the **AD - Archive/Delete Release** option from the Release List panel in ERO Release Administration.

Pause Work on a Release In Progress

This procedure assumes that you have merged multiple versions of the same component into a single component in one package, then deleted the other versions of the component from other packages, so that when you resume work, you can populate areas libraries easily.

If you have not cleaned up unneeded versions of components, you need to know which package contains the best version of each component so you know which version to preserve and which version to overlay at package and area checkin.

1 Unblock the release

2 Unblock all release areas.

3 Demote all promoted release area components.

4 Retrieve all areas.

5 Manually execute the **DL-Delete Release Libraries** option from the **Release List** panel in ERO Release Administration.

Appendix A
Supplemental Utilities and Jobs

This appendix describes utilities and jobs available for ERO. They are distributed in the vendor CMNZMF.CNTL library.

Displaying Db2 Table Descriptions

Descriptions of Db2 tables used by ChangeMan ZMF ERO are not included in this manual. Use the following SPUFI SQL to display ERO Db2 table descriptions:

```
SELECT NAME,
       COLTYPE,
       LENGTH,
       REMARKS
FROM   SYSIBM.SYSCOLUMNS
WHERE  TBCREATOR  = 'CMNx'
AND    TBNAME     = 'CMNRLSIAT'
;
```

In this example, x is the one-character subsystem ID of the SERNET started task for which table CMNRLSIAT was defined.

ERO Db2 tables include:

Release Management Tables	
CMNRLSHST	Component History Table
CMNRLSCIM	Component in Motion Table
CMNRLSIAT	Release Impact Analysis Table

Reorganizing Release Audit Db2 Tables

Sample job CMNDB2RR discards table rows that will be populated by release audit and reorganizes the remaining table rows. If this job is run before a large release audit is executed, audit efficiency is improved.

Sample JCL Member	CMNDB2RR
Suggested Frequency	Run before auditing release areas that contain many thousands of components.
SERNET Status	ChangeMan ZMF may be up or down.
Parameters	None

Release Audit Tables	
CMNDIRSRC	Directory Data for Non-Load Members
CMNDIRLOD	Directory Data for Load Members
CMNCOPS	Copy within Source, Source Members
CMNCOPSCPY	Copy within Source, Copy Members
CMNCLOD	Composite Load Members
CMNCLODLOD	Load within Load Members
CMNCLODOBJ	Object within Load Members
CMNCLCT	Load within Binder Control Member, Binder Control Member
CMNCLCTLOD	Load within Binder Control Member, Load Member
CMNERRORS	Audit Errors for Components
CMNERRORTYPES	Error/Warning Descriptions

Synchronizing Package Count

Utility program CMNRPKSN synchronizes the count of packages attached to a release with the actual number of attached packages.

When a package is attached to a release or when a package is detached from a release, two records are updated in the package master:

- The release name and starting area name are updated in the package record.

- The count of attached packages is updated in the release record.

These record updates are executed serially. If there is a system interruption between these updates, the count of attached packages displayed on the **Release List** panel (CMNRMRLF) will not match the number of packages displayed on the *release* **- Release Package List** panel. (The *release* **- Release Package List** panel is accessed through option **PK-Package Functions** from the **Release List**.)

Sample JCL Member	CMNRPKSN
Suggested Frequency	As needed when the displayed count of packages attached to a release does not match the actual number of packages.

SERNET Status	ChangeMan ZMF must be running to update the package master with release information.		
Parameters	RLS=	SYSIN control statement to provide release name or pattern. Multiple release names or patterns can be coded as follows:	
		■	Additional RLS= parameter statements
		■	Separated by semicolon (:) in the same RLS= parameter statement

		These parameter statements are equivalent:
		  RLS=ABCDE
		  RLS=FGH*
		or
		  RLS=ABCDE;FGH*
		This parameter causes all release package totals to be synchronized:
		  RLS=*	

Db2 Table Backup and Reorganization

As with any critical set of Db2 tables it is important that the CIM, HST, and IAT tables are backed up and reorganized regularly. You should follow your site standards where this is concerned but a suggested regime for a regular job is shown below. Note that one or more of these steps may be combined by use of various keywords on the REORG TABLESPACE utility command. You should adopt whatever method is usual at your site.

- Image Copy the tables
- Reorganize the tables
- Image Copy the reorganized tables
- Execute RUNSTATS against the reorganized tables/indexes
- ReBIND all relevant packages i.e. CMNDB2RQ and CMNRA905

Removing Unneeded Component History

Utility program CMNRAHAR deletes superfluous rows from the CMNRLSHST Db2 table to reduce the size of the table.

Release history table CMNRLSHST was originally designed to provide full component history to various ERO functions. ZMF has evolved to the point where release audit is the only function that uses this table. Audit needs only the latest row for each component and the latest checkin row for each component That is a maximum of two rows.

ERO already drops all history rows for components in a release when that release is archived. Utility CMNRAHAR drops non-essential rows from the history table for an active release.

⚠️ **CAUTION!** The ERO component history that is removed by utility CMNRAHAR is not used by ZMF or ERO. However, before you run this utility, make sure that you are not using the data for custom processes.

Sample JCL Member	CMNRAHAR
Suggested Frequency	As needed to keep the release history table from growing too large.
SERNET Status	ChangeMan ZMF should be down.
Parameters	There are two execution parameters for program CMNRAHAR: Db2= Db2 subsystem ID ZMF= One-character subsystem ID of the SERNET started task
Comments	1 See comments in the sample JCL for Db2 BIND, GRANT, and utility CMNRAHAR execution instructions. 2 For best ERO performance, execute RUNSTATS and REBIND on table CMNRLSHST after running job CMNRAHAR.

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